

Acta Odontol Latinoam. Suppl Vol 25, 2012



45th Annual Meeting of the Argentine Society for Dental Research.

Argentine Division of the International Association for Dental Research.



November 8-10, 2012.

Los Cocos, Córdoba, Argentina



**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

1

HYDROPHOBICITY AND BIOFILM PRODUCTION OF CANDIDA SPP. FROM CLINICAL ISOLATES

Scatena MG, Castillo G del V, Lehner EMP, Vera Cucchiario VS, Barembaum SR, Azcurra AI
School of Dentistry, UNC anaazcurra@yahoo.com

Extracellular enzymes from *Candida* species, lipases LIP and proteinases PROT, contribute to the invasion and proliferation of fungus in oral mucosa, causing tissue destruction. According the characteristics of the colonized biological niche, *Candida* can regulate its transcriptional profile to promote its survival and colonization. **Objective:** The purpose of this study was to correlate LIP and PROT activity in *Candida* species isolated from stomatological lesions of oral cavity, and to analyze the possible correlation among gender, age and clinical parameters of patients and mycological results. **Methods:** The strains isolated from lesions: oral candidiasis (ORC), lichens (LIC) and oral cancer (OCA) (n = 20, 10 and 13, respectively, mean age 62 years, 54% female) were identified in chromogenic medium (CHROMagar, France). To quantify the LIP and PROT activity, rhodamine-B plate and protein-rich medium assays were used, respectively, and Pz was determined as halo diameter / well diameter. Data were analyzed using t test and multivariate and linear regression to study associations. **Results:** All strains studied showed LIP and PROT activity. LIP and PROT values showed a strong positive correlation ($R^2 = 0.90$, $p < 0.0001$). Significantly higher values of PROT were observed in species isolated from ORC and OCA ($p = 0.05$). PROT / LIP relationship was significantly higher in *C.krusei* than in mixed cultures ($p = 0.03$). Higher LIP values were observed in species isolated from male patients ($p = 0.02$) and from younger patients ($p = 0.01$). LIP values showed a negative correlation with age of patients ($R^2 = 0.16$; $p = 0.01$). A trend for higher values of LIP in strains isolated from younger patients with OCA was observed. Multivariate analysis reflected an association between:- LIP and male gender;-LIC, with *C.krusei* specie and mixed cultures with female patients; - *C.albicans* specie with OCA and lower values of PROT. **Conclusion:** This work contributes to the knowledge of determinants of fungus pathogenicity, as LIP and PROT, and their behavior related to oral lesion, age and gender of patients and isolated species, which highlights the importance of detection of *Candida* species in non-ORC lesions.

Key words: *Candida*, exoenzymes, stomatological lesions

2

EXTRACELLULAR ENZYME ACTIVITY IN CANDIDA CLINICAL ISOLATES

Castillo G del V, Scatena MG, Lehner EMP, Barembaum SR, Azcurra AI.
School of Dentistry, UNC
graciela.castillo@hotmail.com

Extracellular enzymes from *Candida* species, lipases LIP and proteinases PROT, contribute to the invasion and proliferation of fungus in oral mucosa, causing tissue destruction. According the characteristics of the colonized biological niche, *Candida* can regulate its transcriptional profile to promote its survival and colonization. **Objective:** The purpose of this study was to correlate LIP and PROT activity in *Candida* species isolated from stomatological lesions of oral cavity, and to analyze the possible correlation among gender, age and clinical parameters of patients and mycological results. **Methods:** The strains isolated from lesions: oral candidiasis (ORC), lichens (LIC) and oral cancer (OCA) (n = 20, 10 and 13, respectively, mean age 62 years, 54% female) were identified in chromogenic medium (CHROMagar, France). To quantify the LIP and PROT activity, rhodamine-B plate and protein-rich medium assays were used, respectively, and Pz was determined as halo diameter / well diameter. Data were analyzed using t test and multivariate and linear regression to study associations. **Results:** All strains studied showed LIP and PROT activity. LIP and PROT values showed a strong positive correlation ($R^2 = 0.90$, $p < 0.0001$). Significantly higher values of PROT were observed in species isolated from ORC and OCA ($p = 0.05$). PROT / LIP relationship was significantly higher in *C.krusei* than in mixed cultures ($p = 0.03$). Higher LIP values were observed in species isolated from male patients ($p = 0.02$) and from younger patients ($p = 0.01$). LIP values showed a negative correlation with age of patients ($R^2 = 0.16$; $p = 0.01$). A trend for higher values of LIP in strains isolated from younger patients with OCA was observed. Multivariate analysis reflected an association between:- LIP and male gender;-LIC, with *C.krusei* specie and mixed cultures with female patients; - *C.albicans* specie with OCA and lower values of PROT. **Conclusion:** This work contributes to the knowledge of determinants of fungus pathogenicity, as LIP and PROT, and their behavior related to oral lesion, age and gender of patients and isolated species, which highlights the importance of detection of *Candida* species in non-ORC lesions.

Key words: *Candida*, exoenzymes, stomatological lesions





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

3

ELECTION OF LEARNING STRATEGIES OF STUDENTS OF CHAIR OF BIOPHYSICS, FACULTY OF DENTISTRY, UNT. (FOUNT).

MERLETTI, S.M.; ALDERETE, M.S.; PÉREZ, L.I.

Facultad de Odontología. Universidad Nacional de Tucumán. stellamerletti@hotmail.com

The college student has a leading role in the teaching-learning process and the teacher facilitating the learning guides. The teacher makes decisions establishing classroom teaching how to promote learning. But it is also interesting to know the opinion of the students about how they like working in class and how they want to acquire their knowledge. **The aim** of this study is to determine the strategies that students use when studying preferably Physics and Biophysics. **Methods:** An anonymous opinion survey was administered with two questionnaires to 100 students randomly selected Biophysics. The first investigated How the student learns by Biophysics answer ten questions that should always, sometimes, never. These questions were aimed at determining the most common strategies in learning this discipline. The second questionnaire, based on the experimental part consisted of fifteen questions about How he likes the student learn Biophysics. In this case, too, the possible answers were the same. **Results:** In the pooled analysis questions. In the first questionnaire, the majority (72%) of the students sometimes used their experience of everyday life, also most (66%) always solve problems and exercises at home, 20% always used memory, a 84% sometimes used the literature, the majority (70%) always made notes, 95% never watch TV programs with scientific relationship, and 52% never ask others for help. In the second questionnaire: 59% always liked the experimental work, 64% preferred that the teacher always propose other strategies, to 69% always liked the study material of the chair, a 46% always prefers solve problems, to most (49%) sometimes likes to watch educational videos, and 66% indicated that sometimes likes to explain to their peers. **Conclusion:** The information obtained from the survey is useful for planning to perform activities are chosen, if possible, strategies that are pleasing to the students and also encourage the teaching - learning.

Key words: students, strategies, learning

4

PATIENT SAFETY AND ERROR IN DENTISTRY: PERCEPTION OF STUDENTS FROM GRADE

Brusca MI, Romero J, Grandinetti JA, Spector, C., Cherjovsky R, García Labandal, L.

Universidad Abierta Interamericana.

mariaisabelbrusca@hotmail.com

Objective: To investigate the knowledge, skills and attitudes to Dentistry mistakes (DM) for students to design instruction Patient Safety (SP) in dentistry career. **Methods:** Design exploratory-descriptive. Survey Likert type scale adapted from Madigosky in 68 students. **Results:** a) Perceptions significantly predominant: a) not inevitable commit DM, b) there is a difference between the best and common dentists, c) competent dentists make mistakes too important, d) are most DM due to circumstances in which dentists can do little, d) witness if a mistake not divulge, e) only dentists determine causes of DM, f) error reporting systems are not preventive, f) the safety culture does not provide face DM, g) dentists should spend time working to improve care, h) security is not an issue, nor interested joining the curriculum. b) There were many similarities between agreements and disagreements: a) be very careful is an effective remedy, b) technology reduces errors. **Conclusion:** A) Students perceive 1) disinterest in SP 2) the effect is satisfactory dental care 3) that the safety culture is not very useful to prevent errors B) We consider important to introduce SP in the curriculum of the race.

Key words: patient safety, error in dentistry





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

5

HISTOLOGIC AND BIOMECHANIC STUDY OF FEMUR FROM LEAD INTOXICATED RATS UNDER HYPOXIC CONDITIONS

Lee CM, Terrizzi AR, Bozzini C, Mandalunis PM, Conti MI, Martínez MP. Facultad de Odontología, Universidad Nacional de Buenos Aires. chingminglee@hotmail.com

Previously reported studies from our laboratory showed deleterious effects on dental tissues and alterations in the structural behaviour of the mandible of growing rats chronically intoxicated with lead under hypoxic conditions. **Aim:** These findings aimed to investigate in a long bone that supports loads if the biomechanical properties and the bone mass in terms of histomorphometry are also impaired in the same experimental model. **Methods:** Female Wistar immature rats were randomly divided into 4 groups of 10 animals each: C (control group); Pb (1000 ppm of lead acetate in drinking water); HX (exposed to 18 h/d into a chamber maintained at 506 mbar for 90 days) PbHX (both treatments simultaneously). Biomechanical parameters were assessed by a three-point bending test on an Instron Machine Model 4442. Microscopic characteristics were evaluated in decalcified tibiae sections stained with H&E. Statistical analyses were performed by ANOVA and Tukey tests. **Results:** Experimental group PbHX showed a significant reduction ($p < 0,001$) vs the C group in the following growing and bone biomechanical parameters: femoral length (30.77 ± 0.77 vs 32.88 ± 0.61); femoral ultimate load, Wf (107.81 ± 14.17 vs 174.04 ± 18.31) and femoral energy absorption capacity, EAC (4.85 ± 1.96 vs 20.18 ± 1.80). No significant differences between experimental and C groups were observed in femoral cross sectional geometry and material (intrinsic) mechanical properties. Histologic sections of the tibiae evidenced a diminution of trabecular volume (PbHX: 16.45 ± 1.98 vs C: 29.94 ± 4.02 , $p < 0.001$) and growth plate cartilage thickness (PbHX: 46.46 ± 2.77 vs C: 57.51 ± 3.41 , $p < 0.001$). **Conclusion:** Treatments significantly reduced somatic growth, negatively affected femoral maximum capacity to withstand loads and bone mass suggesting an inhibitory effect on the process of endochondral bone formation as measured by histomorphometry. However, architectural efficiency of the cortical design and femoral intrinsic stiffness were not affected by treatments as mandible was, probably due to different embryological origin of the two skeletal bones or to the function that they perform. UBACyT 20020090200013.

Key words: Lead - Bone Biomechanics – Histomorphometry – Hypoxia

6

PERIODONTAL DISEASE IN LEAD INTOXICATED RATS UNDER HYPOBARIC HYPOXIA

Terrizzi AR, Lee CM, Bozzini C, Fernandez Solari J, Elverdin JC, Conti MI, Martínez MP
Facultad de Odontología, Universidad Nacional de Buenos Aires
anto_terri@hotmail.com

Objective: We previously described deleterious effects on periodontal and dental tissues in a model of growing rats chronically intoxicated with lead (Pb) and exposed to hypobaric hypoxia (HX). The aim of the present study was to discern if such oral pathologies are consistent with periodontal disease and whether they are or not enhanced in rats submitted to experimental periodontitis (EP). **Methods:** Sixty Wistar rats were randomly divided into 4 groups: C (control); Pb (intoxicated with 1000 ppm of lead acetate in drinking water for 3 months); HX (exposed to 18 h/d by placing the animals into a chamber at 506 mbar for 3 months) and PbHX (both treatments simultaneously). EP was induced by placing a cotton thread ligature around the neck of the first lower molars (FLM) during the 14 days previous to the autopsy. At the end of the experimental period blood samples were collected to evaluate TNF α ; gums of the FLM and submandibular glands (SMG) were extracted to measure TBA-RS and PGE2 and hemimandibles were resected to assess bone loss by measuring the distance between the cemento-enamel junction and the alveolar bone crest of the first molars roots. Statistical analyses were performed by ANOVA followed by multiple comparison Student-Newman-Keuls tests. **Results:** TNF α plasmatic concentration was greater ($p < 0.01$) in Pb and HX animals with or without EP. TBA-RS content was only significantly higher in gums of hypoxic animals with EP. PGE2 content in the SMG was increased in rats with EP ($p < 0.01$) in all the experimental groups. Pb and HX showed significant higher bone loss vs their respective control only in EP rats. **Conclusion:** Treatments enhance not only alveolar bone loss but also some systemic and oral tissues inflammatory parameters which could aggravate the physiopathological alterations produced by periodontal disease in individuals living in lead contaminated high altitude areas. UBACyT 20020090200013.

Key words: Lead- Hypoxia- Experimental Periodontitis





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

7

FUNGAL ADHESION ON PIERCING. IN VITRO STUDY

Carbajales D, Buchanan J, Testa, Virgilito A, M, Grandinetti JA, Brusca MI
Universidad Abierta Interamericana.
dai_loves@hotmail.com

BODY ART is drilling or insertion into soft tissue attachment of a plastic or steel or jewelry, reflecting in turn a body modification with cultural, religious or spiritual. Clinical studies conducted by this team showed increased adhesion on plastics, plastic and metal then metal rings combined. Metal piercing have no bearing of yeast, by contrast, seems to exert inhibitory effect. The plastic rings with acrylic or increase the contribution of yeasts. This is seen from the third month of using them. **Objective:** To evaluate the hoops colonization with yeasts of different species in vitro. **Methods:** We evaluated three Petri dishes with agar antibiotic Saboureaud with each of the following species *C. albicans*, *C. parapsilosis*, *C. dubliniensis*, *C. tropicalis*, *C. glabrata* isolates all oral cavity in previous works. Each species was planted in three boxes and three rings were placed in a metal, in another three rings combined metal and plastic, and finally 3 plastic hoops. Plate formation observed halo around the hoops and measured with millimeter rule. Statistical analysis was performed with ANOVA. **Results:** All Petri dishes with different species showed the same results. Around plastic rings were combined and growth around and over the piercing. There was no inhibition in 100% of the samples. The metal rings showed average 2 mm halos around and this halo greater for *C. albicans*, then in descending order, *C. glabrata*, *C. parapsilosis*, *C. tropicalis*, *C. dubliniensis*. **Conclusion:** the different *Candida* species adhere to plastic rings and combined. Dentist as a member of the health team should alert patients halos piercing risks, among which is microbial colonization.

Key words: Piercing, Fungus, Candida

8

MIXED INFECTIONS BY YEAST IN PERI-IMPLANT GROOVES IN PATIENTS WITH MORE THAN FIVE YEARS ENDED THEIR TREATMENT.

Bertone A1, Brusca MI 2*, Cuesta A 2, Jewtuchowicz V 1,2. 1 Centro de Micología. IMPaM, UBA-CONICET. Dpto. Microbiología, Parasitología e Inmunología. Fac. Medicina, UBA; 2 Cátedra de Microbiología y Parasitología. FOUBA. adrianabertone@odontosalud.com.ar

The peri-implant groove is a favorable ecological niche to host opportunistic species such as *Candida*. **Objective:** To determine the prevalence of mixed infections by yeast species in the oral mucosa and peri-implant groove in patients with more than 5 years of implant treatment. **Methods:** 89 samples were taken with paper cones from periimplant grooves and 120 samples from oral cavity (mouth, tongue and cheek) with sterile swabs from 40 patients treated. The samples were seeded in differential chromogenic medium (CHROMAgar *Candida*), and the isolations were identified by conventional mycological (Colour onto chromogenic agar micromorphology in milk-tween 80 agar and API ID32C) and specific molecular assay for fungi: primers ITS 1 and ITS 4, and species-specific of *C. dubliniensis*: primers DUBf and DUBr). **Results:** 23.9% were species associations (n = 22) out of 92 positive crops in oral mucosa. The most prevalent association was *C. albicans* with *C. krusei* and *Saccharomyces cerevisiae* with *C. dubliniensis*. Out of 34 cases of positive colonization in tongue, 10 were species associations (29.4%). Out of 29 cases of positive colonization in palate, 9 were species associations (31.3%). Out of 29 cases of positive colonization in cheek, only 3 cases were species associations (10.3%). In peri-implant groove, out of 48 sites infected with *Candida* spp., we found 16.7% (n = 8) of mixed infection. The predominant species were *C. dubliniensis* with *C. krusei* and *C. albicans* with *C. glabrata* (2%). Other associations founded in lesser proportion were *C. dubliniensis* with *Saccharomyces cerevisiae*, *C. tropicalis* with *C. guilliermondii*, *C. albicans* with *C. krusei* and *C. dubliniensis* with *C. glabrata*. There were no significant statistic difference when comparing both ecological niches (p = 0.221). **Conclusion:** *C. albicans* and *C. dubliniensis* were the predominant species both as unique colonizers and in species associations in both ecological niches. Colonization of more than one species of yeast is higher in the oral mucosa (in tongue and palate), than in the peri-implant groove, but also is a favorable ecological niche to accommodate 2 or 3 different species of *Candida*. Work funded in part by the Master of Medical Molecular Biology and Grant UBACYT 20020100200204 UBA

Key words: Peri-implant groove, yeast, yeast association





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

9

DENTAL STATUS AND SOCIODEMOGRAPHIC CHARACTERISTICS OF 12-YEAR OLD SCHOOL CHILDREN IN AVELLANEDA

Fuks J, Pazos X, Napoli A, Fort A, Palomba S, Squassi A. Department of Preventive and Community Dentistry, School of Dentistry, University of Buenos Aires. juliafuks@hotmail.com

Objective: To describe the oral health status of 12-year-old children attending public schools in Avellaneda City, and establish association with social indicators. **Methods:** The population comprised 12-year-old children attending public schools in Wilde, Downtown Avellaneda, and Dock Sud, in Avellaneda, Buenos Aires. A descriptive cross-sectional study was conducted on 344 randomly selected children attending public schools in the aforementioned neighborhoods, who gave their informed consent. Oral examination was performed at each school by students in their 6th year of Dentistry, U.B.A., who were trained and supervised by their teachers. After tooth brushing and drying, visual-tactile examination was performed under natural light conditions with a N°5 explorer. DMFT, DMFS, dmft, dmfs, and component indices were calculated (Klein, Paler, Knutson, 1938,OMS, 1997). Questionnaires were completed to record socioeconomic variables: health insurance through trade-union/employment and enrollment in a social welfare program. Measures of central tendency and dispersion of continuous variables and distribution of frequency of categorical variables were calculated. Statistical analysis was performed using Welsh's robust ANOVA and post hoc Games-Howell tests, Student's t test for independent samples, chi square and proportion tests, and Bonferroni post-hoc test. **Results:** Dental indices: Downtown Avellaneda: DMFT: 3.05+0.25; DMFS: 3.49+0.28; dmft:1.64 +0.34; dmfs:4+1,49; Dock Sud: DMFT:5.64+0,55; DMFS:9.81+1.29; dmft:1.4+0.5; dmfs:4.6+2.19; Wilde: DMFT:4.13+0.31; DMFS:5.53+0.48; dmft:1.45+0.22; dmfs:3.53+0.66. **Results** showed no significant differences between dmft and dmfs and significant differences between DMFT and DMFS ($p<0.001$). On social welfare: Downtown Avellaneda 6.6%, Dock Sud 20.3%, Wilde 20.7%. With health insurance: Downtown Avellaneda 72.8%, Dock Sud 22%, Wilde 41.4%. There were no significant differences between dmft, dmfs, DMFT, or DMFS of children on and not on social welfare, and significant differences between DMFT and DMFS of children with and without health insurance. **Conclusion:** The results reflect a high level of dental pathology, accumulated need for dental treatment, and differences in distribution among the neighborhoods.

Key words: caries – epidemiology – DMFT 12 – socioeconomic level

10

ALTERATIONS IN GLYCOGEN CONSUMPTION SUBMANDIBULAR GLAND (SBM) OF WISTAR RATS BY ACTION OF CYCLOPHOSPHAMIDE

Mazzeo MA, Linares JA, Bachmeier E, López MM, Wietz FM, Finkelberg AB.

Cátedra de Fisiología, Facultad de Odontología, UNC. marceloadrianmazzeo@yahoo.com.ar

Cyclophosphamide (CF) is an alkylating cytostatic type, used in association with other oncology agents in treatment of solid tumors or conditioning schemes for bone marrow transplantation. Many authors reported complications in oral cavity by the action of this drug. The aim of this study was to evaluate the degree of functionality of the GSM Wistar rats by action of CF, measured by percentage of consumption of glycogen stores. **Methods:** 14 male Wistar rats three months old were used. They were housed in individual metabolic cages with controlled temperature and light and free diet. The animals were divided in two experimental groups: 1) Control (C) and 2) treated with CF, dose ip of 50 mg / kg body weight for two consecutive days. Rats were fasted for 24 hours. Were anesthetized and both GSM removed. Submandibular glycogen was analyzed at initial time (t 0) and after 60 minutes of mechanical stimulation (t 60). **Results:** Control rats showed an initial concentration of 47.5 ± 1.8 (m l / 1p.s.) which decreased from 60 to 9.2 ± 1.2 (m l / g -1 ps), resulting in consumption of 81% glycogen deposits. CF group showed an initial concentration of 24 ± 2 (m l / g -1 dw) and was reduced at t 60 to 12.7 ± 1.2 (m l / g -1p.s.), implying a consumption of 47% of metabolic substrate. At t 0 the basal levels of glycogen in CF group decreased significantly in comparison to C. In turn, after 60 minutes of mechanical stimulation glycogen deposits decreased significantly in group C compared to group CF. **Conclusion:** Cyclophosphamide altered the metabolism of carbohydrates, decreasing glycogen synthesis in GSM of rats.

Key words: submandibular glands, cyclophosphamide, glycogen





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

11

A PEDAGOGICAL PROPOSAL FOR DENTAL STUDENTS TRAINING: RECIPROCAL INTEGRATION OF BASIC AND CLINICAL SCIENCES. Carpentieri AR, Scatena MG, Castillo G, Barembaum SR, Azcurra AI, Calamari SE, Castillo B, Tessio A, Orue C, Fernández A, Gigena P, Vera V, Sorokin S, Wexler B, Ochonga G, Manzano M, Martínez MC, Lescano de Ferrer A. Facultad de Odontología, Universidad Nacional de Córdoba. sbaremb@yahoo.com

Integration of knowledge and ability of its application with suitable clinical criteria is one of the main purposes for academic formation of dental student. In this sense, a pedagogic proposal between Cathedras "B" in Introduction to Chemistry (IC), Biological Chemistry (BC) and Child and Adolescent Integral Dentistry (CAID) was designed, in order to articulate Introductory (IC), Basic (BC) and Training Professional Cycles (TPC) of Career. **Objective:** The purpose of this study was to design and implement interdisciplinary activities between basic and clinical areas of knowledge that allows students to interpret and to apply these concepts to specific clinical situations. **Methods:** The proposal consisted in a workshop on "Analysis of clinical physicochemical parameters of oral environment: caries risk classification. Importance of sample collection". It was organized at different stages: 1: design, coordination and setting of the educational activity; 2 stage: implementation of theoretical and practical activities of CAID; 3 stage: analysis and interpretation of results; 4 stage: implementation of clinical practices; 5: evaluation of the experience. All teachers and students (2011-2012) from different levels of Career participated in the activities. **Results:** Teaching was evaluated through a semi-structured questionnaire. Students declared a great interest on this activity, in both, 1st and 5th year of the Career, which resulted in 77% in BC students and 95% of CAID. In addition, 78% of BC alumni remarked the "approach to clinical and professional practice" and "the importance of the concepts learned in the course." 89% of students of the 5th year of Career concluded that the activity was "very dynamic and positive" and that "it was first time working in interdisciplinary". **Conclusion:** This activity achieved:-That students from 1st year interacted with alumni from the TPC and projected basic knowledge to clinical practices.-Being very productive to integrate studied concepts. - 5th year's students could review their clinical practices based in their learning and training during IC and BC. These results encourage us to continue these activities, involving dental students to real clinical situations.

Key words: dental students training, basic and clinical integration

12

EVALUATION OF THE PAROTID GLAND ACTIVITY BY QUANTIFYING SALIVARY α -AMYLASE IN PATIENTS UNDERGOING BONE MARROW TRANSPLANTATION (BMT)

Bachmeier E, López MM, Mazzeo MA, Linares JA, Wietz FM, Finkelberg AB.
Cátedra de Fisiología, Facultad de Odontología, UNC. evelinbach@hotmail.com

Numerous salivary alterations were observed in patients undergoing bone marrow transplantation. Considering that salivary proteins have got important functions, changes in profiles after conditioning therapy, could affect the oral cavity homeostasis. Some authors detected variations of some enzymes with antimicrobial activity such as lactoferrin, IgAs and β -2 microglobulin. Concerning salivary α -amylase, the literature has shown unclear results in patients undergoing BMT. Based on this background, **the aim** of this work was to evaluate the concentration of salivary α -amylase in patients undergoing BMT before and during treatment. **Methods:** An observational longitudinal study in 17 patients undergoing allogeneic BMT was made. Baseline saliva collection was performed before the conditioning therapy (initial stage I) and 7-10 days after BMT (II). Then we measured salivary amylase concentration by Berthelot method (colorimetric amiloclástico) expressed in units amylolytic per ml of saliva (AU / ml). **Results:** The concentration of α -amylase in I was 670 AU / ml \pm 51.11, decreasing significantly in II, where the value was 316 AU / ml \pm 41.28, $p < 0.0001$. **Conclusion:** patients undergoing allogeneic BMT, showed in this study, a significant reduction in the production and secretion of α salivary amylase, that could be interpreted as impaired functional activity parotid by action of high-dose chemotherapy.

Key words: BMT, parotid, salivary alpha-amylase, chemotherapy.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

13

MELPHALAN EFFECT ON SOME FUNCTIONAL PARAMETERS OF RATS PAROTID GLANDS.

Mazzeo MA, Linares JA, Bachmeier E, López MM, Wietz FM, Finkelberg AB.
Cátedra de Fisiología, Facultad de Odontología, UNC.
ferwietz@hotmail.com

Melphalan belongs to the group of alkylating agents, being indicated for the treatment of melanoma, sarcoma, multiple myeloma and ovarian cancer among others. Although the toxicity profile of melphalan, in both animals and humans is well documented, after many years of therapeutic use it is unclear the effect on salivary glands. **The aim** of this work was to investigate possible changes in the functional activity of parotid caused by melphalan, through evaluation of glycogen consumption and salivary alpha amylase in an animal model. **Methods:** We used 14 male Wistar rats aged three months and divided into two experimental groups: melphalan (M), an intraperitoneal dose of 10mg/kg bw, and a control group (C). Both groups were fasted for 24 hours. After anesthetized and extirpated both parotid gland, glycogen and salivary alpha amylase homogenate and released into the incubation medium, was analyzed. **Results:** Glycogen in M t 0: 23.10 ± 1.85 , in t60: 11.36 ± 1.06 . In C t0: 22.6 ± 1.57 ; in t60: 8.11 ± 0.87 . Salivary amylase M t0 homogenate $765\text{U/ml} \pm 56.78$; in t60: homogenate $169\text{ U / ml} \pm 59$, released to the medium $691\text{ U / ml} \pm 90$. In C t0 homogenate $711\text{U/ml} \pm 60$; t60 homogenate in $118\text{ U / ml} \pm 28$, released to the $637\text{ U / ml} \pm 65$. **Conclusion:** the applied dose of melphalan in this animal model did not affect the functional activity of parotid gland, showing normal glycogen synthesis and consumption. Just as happened with amylase activity which showed no significant difference with the control group.

Key words: melphalan, parotid, glycogen, salivary alpha amylase

14

STUDY OF PHARMACOLOGY FINAL EVALUATIONS IN START AND END OF SEMESTER

Jotko C, Butler T, Iantosca A, Polvora B, Serrano V, Gagliardi R, Cattaneo M, Pertino M, Solari E, Mele S, Degaetano S, Gimenez G, Ameri C
Pharmacology and Therapeutic School of Dentistry UNLP. claudiajtk@yahoo.com.ar

At least one of three student, disapprove Pharmacology final test. This date is worrying for Pharmacology teacher: **Aim** To examine final evaluations of Pharmacology and Therapeutic student in start and end of semester and to observe the relationship between approved and disapproved test in these dates. **Material and method:** We counted sufficient and insufficient tests of March, July, August and 2nd evaluation of December of the period between 2008 to 2012. We selected these examination because there are larger number of students assessed and they match the beginning (March to August) and end (July and December) for each semester. Also, They coincide with start or end of winter or summer holiday. These tests are taken in formal written form. The data were overturned in Microsoft Office Excel 2007. We used statistical tests of Chi square and comparison of two proportions and we used program XLSTAT 2012 taking 95% confidence level. **Results:** We observed 1354 examinations and 402 students disapproved (statistical difference significant $p=0, 00001$). The amount of approve-disapprove according to date was: March 268-121; July 145-94; August 284-113 and December 255-74. These results showed statistically significant difference in favour of the number of successful students in the analysis of March-July teams, March-December and August-December ($p= 0.04, 0.01$ and 0.004 respectively). **Conclusion:** There are differences in the ratio approve-disapprove of final evaluations, especially at the beginning of semester.

Key words: final test- pharmacology- semester





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

15

BASIC AND CLINIC DISAPPROVED PRESCRIPTION: COMPARATIVE ANALYSIS IN PHARMACOLOGY FINAL EXAMINATION. Jotko C, Pertino M, Solari E, Mele S, Degaetano S, Gimenez G, Ameri C, Butler T, Iantosca A, Polvora B, Serrano V, Gagliardi R, Cattaneo M. Pharmacology and Therapeutic School of Dentistry UNLP. claudiajtk@yahoo.com.ar

The correct basic prescription and its subsequent application in pharmacological treatment in clinical cases, is one of the key issues of Pharmacology courses programme and its evaluation. **Objective:** To analyze comparatively the amount of prescriptions incorrectly carried out in final examinations of Pharmacology. **Material and Method:** we analyzed final evaluation between March 2008 to August 2012. There is final test once a month between March to November and there are two in December. We separated the test whose prescription was incorrect. These assessments requested the student make a prescription according to the instructions. In the final evaluation of the first semester (Pharmacology I) the prescription is basic of any antimicrobial developed during the course. Final accreditation for the second semester (Pharmacology II), the student must prescribe pharmacological treatment of the case that is presented in the evaluation. Data were record in Excel 2007 spreadsheets and the results were submit to Chi square and comparison of two proportions test with level of significance 5 (95 confidence level). **Results:** We analysed 3269 evaluations and we found 1175 disapproved prescription: 437 test were Pharmacology I (basic prescription) and 738 Pharmacology II (prescription with clinical application). The greatest number of incorrect prescriptions was in May with 88 basic and 119 clinics and the fewest number of basic requirements wrong (11) was in September. In November we found the less number of disapproved clinical prescription (36). To apply statistical tests, the difference was statistically significant ($p=0,0001$). **Conclusion:** When we compare the two types of prescription, we notice that students costs mostly make the clinical prescription.

Key words: prescription-pharmacology-final examination

16

DETERMINING THE PREVALENCE OF YEAST SPECIES IN THE EVOLUTION OF BREAST CANCER PATIENTS TREATED WITH ANTIESTROGEN THERAPY WITH TAMOXIFEN (TX), WHO FOLLOW A DIET OF PHYTONUTRIENTS. Hansen A, Brusca MI, Mato, A.V.; Romero, Garzon M, J; Grandinetti J.A.; Pini A, Blanco Villalba M, Bramajo, M. Centro Medico Austral OMI- Universidad Abierta Interamericana. mariaisabelbrusca@gmail.com

It is essential that women with breast cancer with antiestrogen therapy (tamoxifen) and not gain weight or lose it if it is in excess, because a calorie controlled diet prevents fat gain in the breasts, which in excess, leads an increased risk of relapse of cancer estrogen receptor (ER) negative. The nutritional guidelines for this population is based on vegetables, fruits and phytonutrients such as flavonoids and glucosinolates, foods high in these natural estrogens (phytoestrogens). The prevalence and Candida species in oral cavity with a phytoestrogenic power increase. As then in this case behaves antiestrogen therapy (tamoxifen) **Objective:** To determine the prevalence of yeast species in the evolution of breast cancer patients treated with antiestrogen therapy with tamoxifen (Tx), who follow a diet of phytonutrients. **Materials:** an observational study. We included 30 postmenopausal women who attended the Southern Medical Center IMO. The following groups were formed: Group 1, patients diagnosed with Breast Ca Tx treated for less than one year, following a diet of phytonutrients. Group 2 patients diagnosed with Breast Ca, Tx treated for 1-2 years with the same diet. Group 3, patients diagnosed with Breast Ca, Tx treated for 2-5 years with the same diet. Group 4, patients diagnosed with Breast Ca, who have completed their treatment with Tx, which follow the same diet. We conducted a survey of patients about their diet, and periodontal indices were taken by swabbing buccal mucosa. Conventional microbiological studies were performed for Candida species as well as the molecular biology study thereof. **Results:** The findings showed that a higher microbiological variety of Candida species were isolated in patients taking the drug during the first two years (Group 1 and 2). Only two species were isolated in patients taking the drug over two years (Group 3) and those who have completed treatment (Group 4). These coincide with preliminary studies in which no account was taken of the diet, thus, the yeast is independent prevalence thereof. **Conclusion:** The length of the Tx intake influenced the growth of Candida species and, observing a cumulative beneficial effect on the population evaluated.

Key words: breast cancer .tamoxifen. food





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

17

EFFECT OF DIFFERENT PROGESTOGENS OF CONTRACEPTIVES IN PERIODONTAL DISEASE

Mutarelli A, Gomez M, Bucemi L, Lucentini M, Olavegogeoascoechea P, Grandinetti JA, Brusca MI
Universidad Abierta Interamericana. el_ale10@hotmail.com

At different stages of the development of women there are changes in the periodontium as it is one of the target organs for steroid hormone action. Both endogenous hormones such as oral contraceptives (COCs) produce changes in the oral microbiota, our **goal** is to determine the impact that different progestogen (drospirenone, levonorgestrel, gestodene, and cyproterone Dienogest) of COCs in the severity of periodontal disease. **Methods:** We conducted a case-control study, the sample was a group of 300 women 18 to 45 years immunocompetent, with menstrual cycles and a control group of the same age range not consuming AOC. Surveys were conducted with audit risk factors and type of contraceptive used, also evaluated periodontal clinical indicators and samples were collected for microbiological studies. **Results:** Relative diagnosed periodontal status, this varies according to age range, women up to 25 years who eat AOC presents its most severe periodontal disease (gingivitis and prevalence of mild to moderate periodontitis), showing a statistically significant difference versus to not eat ($p < 0.001$) also have a higher count albicans Candida species, Candida parapsilosis and Candida tropical microbiota associated with each disorder in women over 26 years no statistically significant differences between those who consume and those that do not and those over 36 years have mild to moderate periodontitis. In this sample no differences were observed with the different progestins used in periodontal disease. **Conclusion:** Combined oral contraceptives microbiological changes by altering the microenvironment and also to act as nutrients for microorganisms.

Key words: contraceptive.periodontal disease , progestagens

18

MICROBIAL ADHESION BRACKETS TIED WITH LIGATURES DIFERENTRES

Garzon M., Aguilar P, Mele MC, Pagliarone A, Civitate S, J.A. Grandinetti , Brusca MI.
Universidad Abierta Interamericana.
magie1206@hotmail.com

Objective: To evaluate the microbial adhesion to different types of brackets associated with various ligatures-**Material** studied 60 patients of both sexes, aged between 18 and 35 years with periodontal health status and indication for orthodontic treatment fixed appliances, arch technique recto. Se three groups (metal brackets, polycarbonate or ceramic) in each of these patients was tied with a ligature metal side and the other with alastic. Periodontal indexes were collected and sampled with paper points subgingival tooth of study and swab around the bracket. Conventional microbiological techniques were performed. **Result:** The probing depth was 1 ± 0.7 pretreatment and 3 ± 1.14 at sites of ceramic bracket, metal bracket 2 ± 1.1 and 4 ± 1.1 polycarbonate. Microbial adhesion to different brackets presented a statistically significant difference (t test of Student, $p < 0.0005$) of I metal, ceramic and each of these with polycarbonate, which coincides with the work in vitros. los denuestros linked with alastic brackets had a higher number of microorganisms that metal. conclusión linked with: **Conclusion:** The brackets and bands provide a niche artificial primary impact areas of microorganisms that could act as reservoirs of cross infection.

Key words: orthodontic.brackets,microorganisms,ligatura





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

19

EFFECT OF DIFFERENT PROGESTOGENS COCS IN PERIODONTAL DISEASE

Mutarelli A, Gomez M, Bucemi L, Lucentini M, Olavegogeoascoechea P, Grandinetti JA, Brusca
Universidad Abierta Interamericana.
el_ale10@hotmail.com

At different stages of the development of women there are changes in the periodontium as it is one of the target organs for steroid hormone action. Both endogenous hormones such as oral contraceptives (COCs) produce changes in the oral microbiota, our **goal** is to determine the impact that different progestogen (drospirenone, levonorgestrel, gestodene, and cyproterone Dienogest) of COCs in the severity of periodontal disease. **Methods:** We conducted a case-control study, the sample was a group of 300 women 18 to 45 years immunocompetent, with menstrual cycles and a control group of the same age range not consuming AOC. Surveys were conducted with audit risk factors and type of contraceptive used, also evaluated periodontal clinical indicators and samples were collected for microbiological studies. **Results:** Relative diagnosed periodontal status, this varies according to age range, women up to 25 years who eat AOC presents its most severe periodontal disease (gingivitis and prevalence of mild to moderate periodontitis), showing a statistically significant difference versus to not eat ($p < 0.001$) also have a higher count albicans Candida species, Candida parapsilosis and Candida tropical microbiota associated with each disorder in women over 26 years no statistically significant differences between those who consume and those that do not and those over 36 years have mild to moderate periodontitis. In this sample no differences were observed with the different progestins used in periodontal disease. **Conclusion:** Combined oral contraceptives microbiological changes by altering the microenvironment and also to act as nutrients for microorganisms.

Key words: contraceptives.Candida, progestagens

20

RELATIONSHIP BETWEEN SALIVARY PH AND CPOD IN ATHLETES WHO TAKE NUTRITIONAL SUPPLEMENTS

Carbajales D, Bernhardt P, Amighini C, Rau A, Arturi S, Brusca MI, Grandinetti JA.
Universidad Abierta Interamericana. dai_loves@hotmail.com

Streptococcus mutans is involved in tooth demineralization favoring the critical pH 4.5 necessary to start the process of demineralization of the teeth. Athletes in the search for improved performance and athletic performance during training and competition consume nutritional supplements (gels, gummies, bars, sports drinks) as an essential strategy to conserve energy reserves (glycogen). **Objective:** To evaluate the salivary pH change in athletes after consumption of nutritional supplements in CABA skills and training. **Methods:** A descriptive, cross-sectional high performance athletes ($n = 100$), they do marathons of 42 miles and therefore taking these supplements. Was used as a method of data collection systematic survey. The method used is quantitative and qualitative. Salivary pH was evaluated initial and final competition taken with pH strips (Aoke universal indicator paper), these data were fed into ad hoc form. We evaluated the CPOD (decayed, missing, filled). Statistical analysis was performed with ANOVA. **Results:** Of the respondents, 51% athletes consume weekly supplementation during training and 73% during the competition. Of the total sample, 48% have an initial pH 6.8 and 14% had a pH of less than 5.5 at the end of the competition. 40% performed oral hygiene at the end of physical activity and 70% of them made to reach the home, average 3 hours after ingestion. Supplements increased consumption before the competition were the gels (31%) over and completed it, were sports drinks (56%). Athletes who perform weekly workouts, consume sports drinks 72% and 28% water. The average is 9.8 CPOD. With an average component of $C = 2.8$; $O = 3.5$ and $P = 3.5$ **Conclusion:** critical pH is maintained not only during competition but also after it, which leads to an increase in the incidence of cavities, which in turn is associated with very high risk DMFT marathoners. It is necessary to warn athletes about the importance of oral hygiene in a term no longer than 60 minutes after the sport in order to avoid risks cariogenic

Key words: pH, supplementation, sports, Streptococcus mutans





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

21

PRELIMINARY STUDY: CENTRAL OBESITY AS A PREDICTOR OF PERIODONTAL DISEASE

Carballo B, Martinik CA, Severino VE, Brusca MI, Grandinetti JA
Universidad Abierta Interamericana.
carballo_barbi@yahoo.com.ar

Obesity carries an altered adipokine secretory profile; TNF- α or IL-6, which determine the pro-inflammatory state that accompanies the other hand obesidad. Por periodontal disease (PD) shares many mediators of inflammation with obesity because both pathologies involving the condition of chronic inflammation. **Objective:** To determine whether a higher Body Mass Index (BMI) is greater periodontal disease. Determine if a greater waist circumference (CC) independently of BMI, periodontal disease is more aggressive. **Materials:** A descriptive, cross-correlation and non-random sampling, for convenience. Data collection (n = 28) was conducted through a survey taken by pollster calibrated and recorded: weight, height, BMI, WC (waist circumference), attendance and frequency of visits to the nutritionist. Were taken plaque and gingival index, probing depth, attachment loss and serial radiographic both jaws. It took height and weight was calculated BMI to diagnose, measured waist circumference, To determine the correlation, we examined whether those who were overweight or obese had a higher frequency of PGP than those with healthy weight. **Results:** 37.93% were overweight or obese. 48.28% have some form of periodontal gingival pathology. The 54.5% of overweight diagnosed with some form of EP severe periodontitis 27.27%, 9.09% and 18.18% aggressive periodontitis gingivitis. With respect to the relationship with the waist circumference, the 75.86% 18.18% are women has increased waist circumference independent of BMI, of which 50% gingivitis, periodontitis severe 25% and 25% aggressive periodontitis. On the other hand, 24.14% of the population were men where 28, 57% have increased waist circumference of which 50% are in health and 50% have severe periodontitis. **Conclusion:** We can infer that the greater the degree of overweight / obesity, the frequency of occurrence of PGP similar to those patients who are in the normal weight range As for the assertion that higher waist circumference, independent of BMI, greater predisposición the condition of PGP, the sample should be increased in order to analyze the data significantly even in the population of women with CC increased (> 80 cm) to 100% have some form of periodontal disease, other than those that were overweight or obesity.

Key words: obesity, periodontal disease

22

STUDY OF COPING WITH FEAR, ANXIETY AND EMOTIONS COMPARED TO DENTIST IN SCIENCE AND HEALTH FOUNDATION

Casal M, Brusca MI, Aguilar P, Mele C, Grandinetti A, Labandal L.
Universidad Abierta Interamericana. maracasal@hotmail.com

This research is to reveal data on the fears, anxiety and problems that people have with dental care, which are influential factors to this situation, and identify which is the time of greatest fear of patients in the dental care. **General Objective:** To investigate the coping of the dental in adult patients attending the Dental School of American Open University, Health Science Foundation. **Methods:** In Science and Health Foundation of American Open University of CABA, 71 surveys were conducted in patients attending dental consult The method used is quantitative and qualitative, is a descriptive study. The assessment tools are data: CRI-0, 1,2 and 3 surveys. Population: Patients older adults attending the School of Dentistry and Health Science. Foundation of the American Open University, a dental practice. Inclusion Criteria: We included all patients admitted to the Health Science Foundation to be served in this institution. Exclusion criteria: Patients aged under 18. **Results:** 49% of the patients interviewed had no anxiety one day before going to dentist, also had anxiety in the waiting room while waiting to be served. Instead it could be shown that 27% of patients who are undergoing treatments with rotary instruments would have a slight anxiety and 24%% presented extreme anxiety. Another relevant fact is that the majority of patients surveyed have extreme anxiety at the dentist used to treat local anesthetic. It is also worth noting that 44% of patients attending a dentist for pain and infection if such that 37% of all analyzed surveys demonstrate that the feeling you have compared to dentist is some experience that happened in his past. 57% of patients considered to increase the sensation improve patient communication and the dentist. **Conclusion:** The biggest problem people face to dentist might be the use of rotary instruments and local anesthetic. The situation is more consulting the dentist for pain and infection

Key words: fears, dentistry, dental care





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

23

PREVALENCE OF PERIODONTAL DISEASE IN THE CELIAC POPULATION.

Noier M, Carballo B, Grandinetti JA, Brusca MI
Universidad Abierta Interamericana.
mariaisabelbrusca@gmail.com

Celiac disease (CD) is an autoimmune process due to permanent intolerance to dietary gluten present in cereals could exist between the occurrence of PGP and the deficit in consumption calcium and vitamin C in the population diagnosed celiac adult. **Objective:** To determine the frequency of occurrence of disease Periodontal celiac population. **Materials:** 100 surveys were conducted on the frequency of consumption of foods containing vitamin C and calcium and data dental and periodontal indices at both celiac. Sexes over 18 diagnosed in adulthood. **Results:** The average age of the survey population was 44 ± 3 years. When analyzing the frequency of consumption of green vegetables and citrus as food source of vitamin C: 91.67% of the population consumes food source of vitamin C, and only 5 individuals (8.33%) reported not consuming. With respect to citrus consumption was observed that 83.33% of the surveyed population, consume this type of food source of vitamin C. 60% of the population consuming citrus, do it once a week or 2 to 3, only 20% consumed daily citrus Analyzing Quantitatively food consumption source of vitamin C, observed that 70% of the population have a daily intake deficit. Analyzing calcium intake through food source, is the result that 95% of the population eat food source of calcium, while 5% said not consume. Analyzing calcium intake by food source, arises resulted in 95% of the population eat food calcium, while 5% said not consume. Of population PGP presents the 76.09% has positive correlation between the consumption of Vitamin C and the appearance of PGPE regarding the correlation between the calcium intake and the occurrence of PGP, the 95.65% of the population presents positive correlation between deficient intakes of this nutrient PGP and the appearance of 80% of the surveyed population mentioned no Periodontist attend and only has 8.33% nutritional counseling. **Conclusion:** to propose that the EC is a risk indicator for the condition of PGP, we consider the people with celiac disease, periodontal maintenance should attend quarterly and nutrition consultatiomore frecuently.

Key words: celiac, periodontal disease

24

CAREER BIOSAFETY STUDENTS OF DENTISTRY AND MEDICINE AT THE ABIERTA INTERAMERICANA UNIVERSITY

Burna D, Cuchero N, Mutarelli A, Ruiz L, Aguilar P, Mele MC, Grandinetti JA, Brusca MI. García Labandal L.
Universidad Abierta Interamericana. mariaisabelbrusca@gmail.com

The following research aims to make an assessment about the use of biosafety regulations, hepatitis vaccination, and control of HIV. **Objective:** Evaluate compliance with biosafety standards in students for careers in dentistry and medicine at the American Open University. **Methods:** A descriptive and experimental to 160 students in Health Sciences of the American Open University. A questionnaire was designed to estimate biosafety standards used in the field of health. The questionnaire consists of various items: Occupation; vaccination, number of doses; biosecurity control HIV, among others. **Results:** Of the students surveyed, 92% are vaccinated against hepatitis B, 5% no, and 3% did not answer the question. 91% never had hepatitis B, while 9% admitted having had hepatitis B. In connection with the tetanus vaccine has applied the 88%, not 9%, and 3% did not answer this question. As for HIV testing, 55% have taken the test responded, 41% did not ever and only 2% did not answer this question. Among students surveyed 8% had accidents in professional practice, and only 4% of them performed the recommended drug cocktail. Considering that 72% of students received lectures biosecurity and 28% reported not having attended any of them, also 92% of the students recognized using: cap, mask, gloves, both, closed shoes, and Protective eye and only 8% say they use beyond these barriers the gown when caring for a patient **Conclusion:** In both surveys were conducted with students of Racing Health Sciences is important to note that most of them have benefited from discussions and information about the importance of biosecurity in our area. Most of them have given the hepatitis B vaccine and tetanus, and performed the analysis for HIV, but only a minority use all necessary biosecurity barriers when dealing with a patient and only half of the students who had accidents in the practice were recommended drug cocktail. These results make it possible to reflect on the need to redouble efforts on generating opportunities for reflection on teaching biosafety standards and rights and obligations of implementing drug cocktails should you suffer an accident at work.

Key words: biosafety, survey, students





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

25

RESEARCH ON ALCOHOL AND SMOKING HABITS OF COLLEGE STUDENTS

Cuchero N, Burna D, Mutarelli A, Ruiz L, Aguilar P, Mele MC, Grandinetti JA, Brusca MI, García Labandal, L.
Universidad Abierta Interamericana.
mariaisabelbrusca@gmail.com

This paper presents a study of students in health sciences to understand and build on the basis of the results, design an action plan for the prevention of addictions such as smoking and alcohol abuse in students. **Objective:** Identify and evaluate the presence of risk factors in college students. Identify practices in tobacco and alcohol prevention campaigns to generate students at the University. **Methods:** A descriptive, non-experimental, which seeks to determine the presence or absence of risk factors for chronic disease triggers in college students. The sample consisted of 160 students of the School of Dentistry and Medicine of the American Open University. A survey designed to study and applied in the university. The questions included types of risk factors, often specific types of beverages, the amount of consumption, consumption age. **Results:** On the number of students surveyed was that: 59% admit drinking alcohol, 40% not using and only 1% did not answer this question. As snuff consumption, data suggest that: 24% of students smoked, 74% did not consume cigarettes and 2% did not answer this question. Based on the results, the population was revised for years and found that sophomores are those who consume higher amounts of alcohol and seniors who smoke more cigarettes, but also a large percentage of fourth-year students consumed alcohol. **Conclusion:** It was found that the greater the incidence of alcoholism in college students than smoking, and that is relative cursada year of students regarding the use of these substances, although the percentages of students in 4th year are higher, no significant difference. On the number of students surveyed was that: 59% admit drinking alcohol, 40% not using and only 1%.

Key words: risk factors students addictions

26

EXPOSURE TO HEXAVALENT CHROMIUM DECREASES BONE PARAMETERS RELATED TO BODY GROWTH IN SUCKLING RATS.

Sánchez LM, Lewicki M, De Lucca RC, Ubios AM. Department of Histology and Embryology, School of Dentistry University of Buenos Aires. lucianamsanchez@hotmail.com

Hexavalent chromium is a contaminant found in industrial wastes improperly treated and released into the drinking water. Chromium exposure can affect the entire population including children through breast milk and bottles prepared with powdered milk infant formulas. Studies performed in our laboratory showed that exposure to potassium dichromate as hexavalent chromium causes a decrease of body growth and development in rats and recently we have demonstrated the decrease of the bone volume (BV) in the mandible. **Objective:** To study by hystomorphometry the effect of the exposure to hexavalent chromium on the epiphyseal cartilage and the tibiae of suckling rats. **Methods:** Sixteen 4-day-old Wistar rats were employed divided into two groups of eight rats each. The animals in the experimental group received a daily dose of 12.5 mg/kg of potassium dichromate by gavage during 10 days as of day 4. The control group received equal volumes of saline. Total length and tail length were measured at the beginning and at the end of the experiment. All the animals were euthanized on day 15. Tibiae were resected, fixed, decalcified and processed according to the standard procedures. Longitudinally oriented sections of the tibiae were obtained. Using Image Pro Plus 4.5 software, subchondral bone volume and epiphyseal cartilage width were measured. Data were statistically analyzed using Student's *t* test. A value of $p < 0.05$ was considered statistically significant. **Results:** The values obtained in the experimental group were significantly lower than in the control group: BV subchondral: C: $47.31\% \pm 3.27$, E: $34.01\% \pm 1.5$. Epiphyseal cartilage width: C: $1034.93\mu \pm 19.07$, E: $974.55\mu \pm 28.74$. Hypertrophic cartilage: C: $331.93\mu \pm 15.82$, E: $257.5\mu \pm 17.99$. Body growth: Total length: C: $4.45\text{cm} \pm 0.72$, E: $4.01\text{cm} \pm 0.47$. Tail length: C: $2.15\text{cm} \pm 0.38$, E: $1.92\text{cm} \pm 0.6$. **Conclusion:** The decrease of the body growth could be related to an inhibitory effect of hexavalent chromium on forming cells of cartilage and bone.

Key words: Hexavalent chromium - tibiae – body growth





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

27

B-LEARNING AS A PEDAGOGICAL INNOVATION AT THE DEPARTMENT OF HISTOLOGY AND EMBRYOLOGY

Coria SH, Sánchez LM, Mandalunis PM. Department of Histology and Embryology, School of Dentistry University of Buenos Aires. silviahcoria@gmail.com

B-learning (blended learning) is an educational approach that combines face-to-face classroom lessons with computer-mediated learning activities. In 2011, the Department of Histology and Embryology added a new elective course to the teaching curriculum, i.e. "Microscopy: a Theory and Practical course for Beginners", employing the b-learning approach. **Objective:** To evaluate the pedagogical innovativeness of our first experience in semi face-to-face teaching in an elective course of the Department of Histology and Embryology of the School of Dentistry, UBA. **Method:** The elective course was aimed at students in their first years of Dentistry and those who had seen 40% of the contents of the course in Histology and Embryology but had not taken their final examination. B-learning was employed. The teaching modality included: a) face-to-face seminars; b) hands-on lessons in routine histological technique and microscopic observation; c) face-to-face written examination; d) computer-mediated lessons; e) computer-mediated and face-to-face activities; f) participation in forums using the Department's virtual space on the Moodle-platform of the Citep-UBA. At the beginning and at the end of the course, the students anonymously completed a questionnaire aimed at knowing the students' profile and have their opinion on the activities developed throughout the course by rating them qualitatively (Excellent, Very Good, Good, Fair- Poor). **Results:** The data gathered from the final questionnaire allowed knowing the students' opinions; 77% had a favorable opinion on the course-contents (Exc-VG) and 80% rated the course as Exc-VG. In addition, 83% of students thought the b-learning modality motivated them to participate actively and 74% saw it as more advantageous to their learning compared to the purely face-to-face modality. **Conclusion:** The obtained results show the students favorably accept the mixed modality. This finding allows pointing out that implementing b-learning would strengthen the students' participation and commitment to their learning.

Key words: B-learning - Virtual environments - University teaching.

28

ADAPTATION OF GLASS IONOMER OF HIGH VISCOSITY TO A DENTINE WITH DIFFERENT TREATMENT.

Uribe Echevarría LJ, Rozas CA, Mas C, Rodríguez IA, Uribe Echevarría J
Faculty of Dentistry and CIQUIBIC, UNC. jorgeuribe@ciudad.com.ar

The **objective** of this work was to analyze the adaptation of a glass ionomer cement of high viscosity with different treatments to the deep dentine, considering the interface union of this biomaterial to the pulp cavitory wall, through the use of confocal laser scanning microscopy (CLSM). 24 healthy third human molars were used. **Methods:** Simple occlusal Class 1 cavities in deep dentine were prepared. Four groups of 6 teeth each one were made, in these groups the substratum of the dentine received the following treatments: Group 1 (control Group), washing with pressurized filtered water was done; Group 2 was prepared with phosphoric acid at 34.5 % Vococid (VOCO GMBH); Group 3 was treated with GC Cavity Conditioner (GC Corporation) and in Group 4 the dentine was treated with hypochlorite of sodium at 5.25% (Tedequim Laboratory SA). The four groups were filled in one piece with a glass ionomer cement of high viscosity (CIVAV) EQUIA Fil (GC Corporation), with a layer thickness of 4 mm. Cuts in a mouth-lingual direction of 200um were made and a solution of fluorophoro Rhodamina B at 0.1 (Sigma_Aldrich) was used to its later observation through CLSM FV1000 (Olympus). The adaptation of the CIVAV to the substratum of the dentine was considered through the quantification of the interphases in the biomaterial and along the pulp wall, visualizing the presence of gaps of desadaptation. **Results:** The results were: a) in Group 1 imperceptible desadaptations in the pulp wall level with desadaptation values of $\pm 0.78\mu\text{m}$ were observed; b) in Group 2 interphase desadaptations in the pulp wall level of $\pm 2.89\mu\text{m}$ were evident; and in Groups 3 and 4 interphases of zero or nonexistent tendency were seen in the pulp wall. **Conclusion:** the adaptation of the CIVAV to the pulp wall of the cavitory preparations in deep dentine treated with with GC Cavity Conditioner and sodium hypochlorite was higher in getting the best behaviour in the conditioning of the substratum with the presence of zero interphases.

Key words: Glass ionomer, adaptation, deep dentine





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

29

CARIES EXPERIENCE AND QUALITY OF LIFE IN YOUTH CONFINEMENT

Barnetche, M. Marcela; Cornejo, L. Susana. Procon.
Facultad de Odontología. UNC
marcebarnetche@yahoo.es

Dental caries is one of the most prevalent of the oral diseases, in addition to the physical damage may have economic and psychosocial implications, which can affect the quality of life of a person. **Objective:** To evaluate the impact of caries experience in the quality of life of young institutionalized in correctional area of Cordoba. **Methods:** We performed a cross-sectional study involving 52 young people, aged 14 to 18 years (mean age 16.9 ± 1.21), 92.3% M and 7.7% F, institutionalized in correctional facilities in the city of Cordoba. Through clinical examination were recorded: elements present, decayed, missing and filled, it was determined DMFT and type of treatment required. To investigate the profile of oral health impact questionnaire was applied OHIP49. The data were processed statistically using the program Infostat 2012 version. We applied the Pearson coefficient to assess the correlation of the variables. **Results:** The mean of elements present in the mouth was 28.2 ± 1.41 ; DMFT was 9.3 ± 4.76 ; D: 7.6 ± 4.23 , M: 0.6 ± 0.99 and F: $1.1 + / - 2.23$, and 63.46% need rehabilitation. Regarding the profile of oral health impact on quality of life, the greatest impact OHIP49 identified in relation to: concern for their health and body (physical discomfort) 50% functional and aesthetic concerns (functional limitation) 42.31 % dental pain (physical pain) 38.46%; interrupt meals (incapacitating) 40.38%. Less impact was detected in relation to nocturnal sleep disruption and presence of discomfort (psychological incapacity) 28.84%, to perform daily activities (social disability) 23.07%, for interruption of work tasks (at a disadvantage) 17.30%. The correlation between OHIP49 and DMFT was $r = 0.46$ ($p = 0.0006$), with $r = 0.49$ ($p = 0.0002$) for the dimension "physical pain". **Conclusion:** caries experience produces a medium impact on the quality of life of youth in confinement being the dimension of physical pain primarily responsible.

Key words: caries experience, quality of life, OHIP49

30

IMPACT OF PARENTS' PERCEPTION OF QUALITY-OF-LIFE ON ORAL-HEALTH STATUS OF 0-5-YEAR-OLD CHILDREN.

Fuks, Julia; Mendel, Nancy; Levy, Teresa; Fernández, Marcelo. Department of Comprehensive Children's Dentistry. School of Dentistry. University of Buenos Aires. tere_levy@hotmail.com

The Early Childhood Oral Health Impact Scale (ECOHIS) is an indirect measure of the negative impact of oral health problems on the quality of life of preschool children. The **Objective** of the present study was to describe the oral health status of a group of children aged 0 to 5 years seen at the, Department of Comprehensive Children's Dentistry, FOUBA, and analyze its impact on quality of life as perceived by the children's parents. **Methods:** The study population comprised 49 children (mean age: 3.3 ± 1.2) seen at the Department Clinic on Saturdays from May through July 2012. Two teachers performed the oral examination, which included dental examination to calculate dmft/dmfs indices and each component of the indices separately (Klein et al 1938). The children's parents/caregivers completed the validated Spanish version (Bordoni, 2010) of the ECOHIS questionnaire (Pahel et al, 2007). Distribution of frequency, arithmetic mean, and dispersion of the studied variables were calculated, and Pearson's correlation coefficient was analyzed. **Results:** 86% of children had dental caries; dmft = 5.16 ± 4.41 , dd = 4.87 ± 3.95 , dmfs = 7.87 ± 9.78 , ds = 6.44 ± 6.49 ; dental care index (care index. Walsh, 1970) = 0. The most frequently reported impact was pain (47%), in the child impacts sections, followed by guilt (47%) and time spent on their child's dental problems/treatment (37%), in the family impacts section. A significant correlation was observed between the frequency of pain as perceived by the parents/caregivers and the child's dmfs score ($\rho = 0.329$ and $p < 0.05$). **Conclusion:** The parents' perception of their quality of life has a negative impact on the oral health of children aged 0 to 5 years.

Key words: ECOHIS, Quality of Life, Perception, dmfs





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

31

TITANIUM MICRO AND NANOPARTICLE DEPOSITS IN THE GINGIVA. AN EXPERIMENTAL STUDY

Domingo M, Paparella ML, Ramos E, Guglielmotti MB, Olmedo DG.

Department of Oral Pathology. School of Dentistry, UBA – CONICET. marieladomingo@hotmail.com

Gingival pigmentation can occur due to metals that enter the body via oral or parenteral route. Most studies have found these deposits to be located in the buccal gingiva. Due to corrosion processes, the surface of titanium implants is a potential source of contamination with micro and nanoparticles (1-100nm). **Objective:** To compare deposits of different grain sized titanium dioxide (TiO₂) particles in the buccal and lingual gingiva using histological and quantitative methods. **Methods:** Forty Wistar rats were intraperitoneally injected with a suspension containing different sized TiO₂ particles: EG1: 150nm microparticles; EG2: 10nm, and EG3: 5nm nanoparticles. One group was injected with saline solution (CG, control). The animals were euthanized at 12 months. The buccal and lingual gingivae were resected, fixed in formalin, and embedded in paraffin; sections were obtained and stained with H-E or Grenacher's carmine. Immunohistochemical techniques were used to study Langerhans cells. Microchemical determination of titanium was performed using inductively coupled plasma mass spectrometry (ICP-MS). The samples were also studied by scanning electron microscopy (SEM) and energy dispersive x-ray analysis (EDX). **Results:** The histological study showed clusters of titanium particles (EDX) in the chorion and epithelial cells of buccal and lingual gingiva of all experimental groups, with no associated inflammatory response. Studies by ICP-MS revealed higher traces of titanium in all the experimental groups compared to controls. The deposits in the buccal gingiva were significantly larger than those in the lingual gingiva (3.07 ± 1.46 vs 1.61 ± 0.68 , mg/kg⁻¹; $p < 0.05$). Titanium traces were significantly higher in the 5nm group than in the 10nm group in both localizations (buccal gingiva: 4.12 ± 0.77 vs 2.00 ± 0.80 ; lingual gingiva: 2.21 ± 0.60 vs 1.22 ± 0.17 , mg/kg⁻¹; $p < 0.05$). **Conclusion:** Deposition of micro and nanoparticles is higher in the buccal gingiva. Such deposits may be indicators of corrosion processes suffered by titanium implants.

Grants: PICT2008-1116 ANPCyT, UBACyT20020100200157-20020100100657, PIP11220090100117 (CONICET).

Key words: titanium, corrosion, microparticles, nanoparticles, gingiva

32

METHODS TO STUDY ORAL PIERCING CORROSION. A PRELIMINARY STUDY

Ferrari L, Sebelli P, Guglielmotti MB, Olmedo DG.

Departments of Dentistry for Children and Oral Pathology. School of Dentistry. University of Buenos Aires. CONICET. lferrariod@yahoo.com.ar

The use of metal oral piercings is a frequent practice among adolescents. Edema, infection, gingival and dental trauma, and increased salivary flow are among the complications associated with this practice (SAIO 2011). Any metal in contact with biological fluids can suffer corrosion processes and release ions/particles into the biological milieu. Most studies addressing the use of piercings have focused on the psychosocial, epidemiological, and clinical aspects. Histological studies of tissues in contact with metal oral piercings and methodologies that may serve for their evaluation, are scant. **Objective:** To perform histological evaluation of corrosion indicators, in cells exfoliated from tissue surrounding metal oral piercings. **Methods:** Ten teenage patients, average age 15 ± 3 years, using metal oral piercings in the lingual and/or labial mucosa were studied. Cells were exfoliated from the area peripheral to the metal piercing using a microbrush. Time since piercing placement and collecting samples ranged from 12-24 months. Cytological smears were fixed in 96° alcohol and stained using the Papanicolaou technique. The cytological study was performed using light microscopy. The surface of the piercings was studied by scanning electron microscopy (SEM) and microchemical analysis was performed using energy dispersive X-ray analysis (EDX). **Results:** On clinical examination, some patients showed signs of metallosis. The cytological smears exhibited different sized and shaped particles outside and inside epithelial cells. The microchemical analysis of the metal piercings showed they contained chromium, iron and nickel. SEM showed the presence of pits and irregularities on the surface of the metals. **Conclusion:** Exfoliative cytology and complementary studies by SEM and EDX are useful methods for the histological evaluation of corrosion processes associated with metal oral piercings.

Grants: PICT 2008-1116 ANPCyT, UBACyT 20020100200157 – 20020100100657, PIP 11220090100117 (CONICET).

Key words: corrosion, oral piercings, exfoliative cytology





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

33

ARTICULAR CARTILAGE REGENERATION BY USING BIOSTABLE SYNTHETIC SCAFFOLDS. Sancho-Tello M, Gastaldi P, Forriol F, Ruiz-Saurí A, Martín de Llano JJ, Rojas N, Gómez Ribelles JL*, Carda C. Departamento de Patología, Facultad de Medicina y Odontología, Universidad de Valencia; *Centro de Biomateriales, Universidad Politécnica de Valencia; CIBER-BBN; INCLIVA; Valencia (España). Carmen.Carda@uv.es

Objective: Temporomandibular joint pathologies originate severe oral disfunctions, thus we proposed to study the mechanism of articular cartilage regeneration in an animal model, by using Tissue Engineering techniques, through the implant of a synthetic scaffold that transmits mechanical force to the surrounding tissues, being mesenchymal stem cells migrating from subchondral bone the cellular source. **Methods:** Rabbit New Zealand were used, we originated a cavity in the articular surface, affecting cartilage and subchondral bone. In such cavity, a synthetic scaffold made of a biostable porous material bioestable (ethyl acrylate-co-hydroxyethyl acrylate), with the same size than the cavity, that was soaked in blood arriving from subchondral bone. Animals were sacrificed at 7, 14, 30, 90 and 365 days after surgery, and tissue regeneration was morphologically studied using histological techniques. In control animals, a cavity was excavated but no material was implanted. **Results:** Tissue regeneration started in the first week after surgery, with chondrocyte proliferation located around the cavity, and an incipient tissue formation within scaffold pores, in its deepest zone, which were progressively extending throughout the scaffold thereafter. One month after surgery a centripetal growth was observed on the edge of articular cartilage, which seemed to push the scaffold to the subchondral bone. Three months after surgery, articular cartilage regeneration was observed in the area of drilling with a cartilage that looked like hyaline, which presented an excellent organization 12 months after surgery. Scaffold pores were filled with cartilaginous tissue in superficial and middle zones, while bone tissue was observed adjacent to the subchondral bone. Control animals, where no scaffold was laid, showed a fibrocartilaginous tissue filling the excavated cavity. **Conclusion:** Articular cartilage regeneration was possible thanks to the presence of biostable scaffolds, which suggest the important role of the transmission of mechanical strength in order to guide the cartilage regeneration.

Key words: Cartilage - Regenerative Medicine - Scaffolds

34

SCALE MEASURING FEAR OF DENTAL CARE

Martí SE, Giaquinta MA, Aciar E, Levinzon G, Domingo S, Pascucci J.
Universidad Nacional de Cuyo, Servicio de Psicología, Departamento de Periodontología.
mariagiaquinta@hotmail.com

Fear of pain is a barrier that interferes in the dental patient. **The aim** of this work was to create a scale exploration of the dental fear and desirable strategies to decrease. **Methods:** We used the Likert Scaling Method for measuring the scale of variables. Was conducted in two phases: a pilot phase in order to validate the scale in a small sample (n = 20) and then administering it to 105 patients attending the dental office of the Faculty of Dentistry, National University de Cuyo, Mendoza province. This group (n = 105), 65.7% are women (69 cases) and 34.3% men (36 cases). The instrument was administered individually by researchers previously calibrated. Three designs were validated different drivers in order to measure out as representative of the emotion that was intended to measure. The **results** indicated that 79.1% of the subjects have long and pretty scary to infections from dental interventions. Greater than 74% feel connected to the lack of hygiene clinic or revised without gloves. Second is very afraid of the dentist can touch a nerve, you drill too, it breaks a tooth or a mistake in diagnosis. **Conclusion:** Most of the study volunteers want to be treated sympathetically and to explain the procedures and anticipate what is going to feel.

Key words: fear, rating scale, dental





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

35

INSERTION OF BIOETHICS AS A TRANSVERSE AXIS TO PERIODONTOLOGY FOR PROMOTION OF ATTITUDES IN STUDENTS OF DEGREE

Giaquinta MA, Pascucci J, Fracapani M, Pesce E, Conill J. Departamento de Periodontología, Facultad de Odontología Universidad Nacional de Cuyo. mariagiaquinta@hotmail.com

The integral formation of the students includes scientific aspects, technical, humanistic. **Objective:** To identify attitudes bioethical students of 3rd Dentistry UNCuyo; identify some generic skills developed during the Seminar on Bioethics transverse to the module; compare attitudinal content in students of 2nd, 3rd and 4th year and compare the professional profile of the curriculum of the institution with the European Union document competence of the dentist. **Methodology:** qualitative and quantitative approach. Seminar was developed during the 2009 cycle with 3rd year students (n=42). We conducted action research, workshops, meetings and records with checklists. Surveys were diagnostic and final. Analysis and comparison was made between the professional profile of curriculum and the EU document. Were recorded with observation guides bioethical competence in clinical practice of students in the 3rd (experimental), students of 2nd and 4th (controls) n=30 each group. **Results:** Students showed high willingness to learn during the seminar. We found similarities between the professional and the EU document with aspects not included in the curriculum: continuing professional development skills, regarding bioethics, communication, respect for diversity. We performed nonparametric Friedman for items of clinical observation guides Likert scale. Statistically significant differences were found in all items according to categories always scale p=0.000, almost always p=0.002, sometimes p=0.000, but not for ever category p>0.05. Students in 3rd Bioethics highlighted favorable influence on personal aspects, patients and teachers. Valued at Seminar in excellent 12%, very good 57%, good 31%. **Conclusion:** The students incorporated some skills raised from the Bioethics and stressed: respect, patient consideration, integrity and more active. The insertion of Bioethics profile contributes to proposed curriculum

Key words: bioethics; dentistry education; competences

36

ASSESSMENT OF TOOTH MATURATION AND ERUPTION IN PATIENTS WITH THYROID ANOMALIES. HYPOTHYROIDISM.

Giménez E,* Miras Miartus M, Rugani de Cravero M, Damiani P, Martinez C, Evjanian G, Varela de Villalba T, Tolcarchir B, Villalba S, Rubial C, Signorino M, Lescano de Ferrer A. Facultad de Odontología UNC. gimenez_odonto@hotmail.com

Endocrine disorders in growth are frequently observed at clinical practice, being congenital hypothyroidism the most common one. This disorder affects physical bone development, as well as oral and mental health, and that is the reason why it is of utmost importance to observe it interdisciplinary at a very early stage. **Objective:** to asses if an early diagnosis and treatment of congenital hypothyroidism allows for a normal bone and dental development, relating chronological age (CA) with bone age (BA) and dental age (DA) **Methods:** a descriptive, observational and transversal study was performed in children of both sexes (n=24), from 5 to 10 years of age (\pm 9 months), with congenital hypothyroidism, treated before the first month of age. A clinical history, clinical dental stomatology examination was performed together with X-rays: orthopantomography and carpal radiography to asses dental and bone age. X-rays were digitalized for their procedure and analysed according to Dermijian –Levesque, Greenlich and Pyle tables. Data was processed with Stata 10 Software and we used models for variance and regression analysis. We worked with a signification level p \leq 0,05. **Results:** when comparing CA and DA, 68% of cases presented a delay in DA and 27% an older DA. When comparing CA and BA, 71% showed a younger BA than CA with 24% BA older than CA. When considering sex, differences were bigger among female, showing a delay between DA and BA with CA, with statistically significant values in its relation. (p<0,05). **Conclusion:** no adequate relation between chronological age and bone dental maturation was observed in patients with congenital hypothyroidism treated at an early age. Results suggest that sex is a determining factor with respect to bone delay.

Key words: Hypothyroidism-tooth maturation -eruption





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

37

TENSILE STRENGTH OF FIBER POSTS USING SELF-ETCH RESIN-BASED CEMENTS

Julián S.; Gigena C.; Gil Rodriguez P.; Sakalian C.; Visvisian MC; Harrán E.
Fac. de Odontología. U.N.C. Cátedra de Prosthodontia 1"B"
daniel-gigena@hotmail.com

Teeth damaged by caries or trauma often need endodontic treatment. In many cases, there is a need for root anchorage as a link between the remaining structure and the coronal restoration. Research on endodontically treated teeth restored with fiber posts show that these are highly retentive and conservative when restoring such teeth. The boom on the usage of adhesive materials and techniques causes confusion that may lead to an improper selection of the best alternative. There is no consensus over the adhesion quality of organic posts and different cements used on the literature. Even though there is a wide variety of resin-based cements, little information is available with regards to the physical properties of self-etch cements, probably due to its recent appearance on the market. **Objective:** To assess tensile strength of organic posts using self-etch resin-based cements. To determine the relation between adhesive strength and the kind of cement employed **Materials and method:** 40 upper central incisors, endodontically treated by a conventional technique and filled with gutta-percha points and AH Plus cement (Dentsply, Maillefer) were used. For all testing groups, FRC Postec Plus fiber posts (Ivoclar-Vivadent, Schaan, Liechtenstein) were used. Group 1: conventional total-etch technique with phosphoric acid, adhesive system (primer-adhesive) and Duo-Link (Bisco). Group 2: self-etch adhesive system Adhe-SE and VarioLink II (Ivoclar-Vivadent). Group 3: Multilink Sprint (Ivoclar-Vivadent). Group 4: Bis-Cem (Bisco). Tensile strength tests were performed using a universal testing machine (Diginess – MX5000) with a cross-head speed of 0,5mm/min until failure. **Results:** Data were analyzed by means of the Kruskal-Wallis test. Differences among groups were not significant ($p>0,05$). Group 3 showed the highest record (media 176,3 N) **Conclusion:** Groups 3 and 4 (self-etch cements) showed better performance than Groups 1 and 2, but such result was not statistically significant.

Key words: Fiber posts, self-etch cements, tensile strength

38

CHRONIC ALCOHOL CONSUMPTION PRODUCES DUAL EFFECTS ON ORAL INFLAMMATORY MARKERS

Surkin PN, Ossola CA, Pugnali A, Ortega G, Mohn CE, Elverdin JC, Fernandez-Solari J. Catedra de Fisiología/Facultad de Odontología/UBA. nicosurkin@hotmail.com

The alcohol abuse is one of the larger social issues. Chronic users are more susceptible to infections because their immune defenses are altered. **Objective:** to evaluate the influence of chronic alcohol consumption on inflammatory parameters in the submandibular gland (SMG) and gums of rats under physiological conditions (baseline) and pathological (gingival injection of LPS). **Methods:** to evaluate the influence of chronic alcohol consumption at baseline we worked with two experimental groups (n=6): 1) control rats, 2) alcoholic rats (20% alcohol in drinking water for 8 weeks at demand). To evaluate the influence of alcoholism in pathological conditions, 4 experimental groups were used (n=8): A) rat with gingival injection of saline, b) alcoholic rats injected with saline, C) rats injected with 10 ml of lipopolysaccharide (LPS, 2 mg/ml), D) alcoholic rats injected with LPS. The injections of LPS were applied in the vestibular and palatal/lingual gums of the first molars and in the interdental space between the first and second molars of both jaws. The treatment was carried out 3 times a week, for last 6 weeks of the trial. At the end of this period we evaluated the content of prostaglandin E2 (PGE2) and the activity of inducible nitric oxide synthase (iNOS) as inflammatory markers in SMGs and gums, using radioimmunoassay (RIA) and radio-conversion, respectively. **Results:** alcoholic rats showed lower gingival iNOS activity and PGE2 content than control rats ($p<0.05$). In the SMG, PGE2 concentration was higher in alcoholic rats as compared to controls ($p<0.05$). The most significant effects of chronic alcohol consumption on LPS-injected rats were shown by the increase of iNOS activity in the SMG ($p<0.05$) and by the decrease in gingival PGE2 content, compared to the increased levels produced by the endotoxin. **Conclusion:** chronic alcohol consumption increased some inflammatory markers in the SMG, but decreased them in the gingival tissue.

Key words: Alcohol; LPS; inflammatory markers





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

39

IN VITRO EVALUATION OF THE DENTAL BAROTRAUMA

Rau A, Brusca MI, Luna I, Garritano M, Serqueira O, Grandinetti A, Leal L, Picca M.
UAI Patología Clínica, Anatomía Patológica, Radiología.
analia_rau@live.com.ar

A scuba diver's body undergoes diverse physical effects during immersion and emersion while performing his tasks. These effects are linked to a variety of physiological responses that need to be considered since the limits of security result from them. The restorative dental materials suffer density variations when the atmospheric pressure changes, resulting a contraction or expansion of them. This phenomenon that occurs on the filling materials can produce a barotrauma. **Objective:** To determine the influence of the compression and decompression of the most commonly used dental restorative materials on scuba diver patients that work under hyperbaric conditions. **Methodology:** Experimental study. Models were designed on aluminum sheets with a 5x5 cm quadrangular shape, 3mm thick, and 1 cm diameter circle in the center. They contained SDI logit amalgam, light cure glass ionomer, and p60 3M A3 comPOSITE. Two aluminum sheets of each material were studied. One of them was left outside as reference and the other one was put under compressive and decompressive forces in a hyperbaric chamber. According to the SAMHAS classification, it was a Class A, cast steel, 6,50 m³ volume, 1500 mm diameter, 3120 mm long, 6 people capacity hyperbaric chamber that simulates a scuba diver's activity under 2,2 atmospheres of pressure. An operator entered the chamber for an hour, measuring the models with a milimetric and manual caliper before and after entering it. **Results:** The materials observed didn't suffered variations. They didn't change their density and remained with 3mm thick and 1cm diameter. **Conclusion:** There was no influence of compression and decompression on the restaurative materials. Given the need to corroborate the obtained data with the clinical practice, more investigations are required. According to what has been outlined, the problems resulting from scuba diving might be related to contraction stress or adhesion techniques and not to the materials.

Key words: scuba diver.barotrauma

40

SMEAR LAYER REMOVAL, EVALUATION OF CITRIC ACID, PHOSPHORIC ACID AND EDTA. A SEM OBSERVATION

Migueles A, Schneider R, Figueroa L, Trabazo V, Gualtieri A, Sierra L, Fernández-Solari, J, Elverdin JC, Rodriguez P – UBA alemigueles@yahoo.com.ar

The success in the root canal therapy depends on the shaping, cleaning and obturation of the root canal. The irrigation is the most important issue during, before and after the shaping and cleaning, based on the periapical tissues healing and in the complete removal of the smear layer. **OBJECTIVE:** Evaluate under SEM observation the efficiency of several chemical substances which are used as irrigants solutions for the elimination of the smear layer. **Methods:** Forty human unirradicular teeth were selected. The anatomical crowns were separated with carbundum disks, and the specimens were randomly placed in five groups of eight pieces each. The root canal was explored with a K 15 file, the shaping was done with the ProTaper System on a crown down technique, irrigated between files with 2 ml of 2,5% NaOCL and immediately vacuumed; a 2 ml saline solution was utilized as a final rinse. The chosen irrigants solutions were set on the root canal of each group for a period of time of 2 minutes. Group 1: Citric Acid 5%, Group 2: Citric Acid 10%, Group 3: Phosphoric Acid 37% and Group 4: EDTA 17% and 2 ml of saline solution was used as a final rinse. The roots segments were sealed with provisional restorations and vitreous ionomers, frozen at -80°C for a 3 hours period and cut in halves with mallet and chisel. The specimens were vacuumed dried for 20 minutes; a fine layer of 99% pure gold was set on them with the purpose of SEM observation. The different median score groups were compared with the Kruskal-Wallis test and the Tukey test as a post-hoc evaluation. **Results:** Significant differences were found between the median scores groups (H= 56,43; gdl=4;p<0,05). The post-hoc comparisons shown that the 5% citric acid and the 37% phosphoric acid were the most effective treatments, followed by the 17% EDTA and finally the 10% citric acid. The saline solution showed the lowest efficiency in the removal of the smear layer (p<0,05 in all comparisons) **Conclusion:** A different degree of efficiency was observed in the removal of the smear layer. (Citric acid 5%= phosphoric acid 37%> EDTA17%> citric acid 10% > saline solution).

Key words: irrigants, smear layer, SEM





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

41

HISTOMORPHOMETRIC STUDY OF INTERRADICULAR BONE AND TIBIAE OF CHRONIC DIABETIC RATS. Sánchez LM, Lewicki M, De Lucca RC, Reznik C, Villarino ME, Ubios AM. Department of Histology and Embryology, School of Dentistry University of Buenos Aires and CONICET. lucianamsanchez@hotmail.com

Type 1 diabetes mellitus alters bone metabolism as a chronic consequence of its evolution, decreasing bone volume (BV) in long bones. Previous studies performed in our laboratory determined that such decrease does not take place in the bone of the jaws. However, we have demonstrated the presence of a higher number of sclerostin positive osteocytes in the jaws of diabetic rats than their controls, which could indicate the establishment of osteopenia in the maxillary bone in a longer term. Our **aim** was to study by histomorphometry the effect of the chronic diabetes on the interradicular bone and tibiae of rats after the 3 months of diabetes induction. **Methods:** Twelve male Wistar rats of 130gr of body weight were employed, which were divided into 2 groups, Control(C) and Experimental(E). The E group received a single i.p. dose of 60 mg/kg of streptozotocin. Three months later all the animals were euthanized. The upper jaws and the tibiae were fixed, decalcified and embedded in paraffin. Bucco-palatine oriented sections and longitudinally oriented sections of the tibiae were obtained and stained with H-E. In the interradicular bone: BV and bone activity and in the tibiae: subchondral BV and epiphyseal cartilage width were measured. The results obtained were compared using the Student t test. A value of $p < 0.05$ was considered statistically significant. **Results:** The values of the histomorphometric study on the tibiae were: BV:C:24.79%±4, E:14.4%±3.86. Epiphyseal cartilage width:C:299.47µm±19.63, E:226.7µm±28.56. Hypertrophic cartilage zone:C: 108.18µm±12.99, E:83.07µm±12.34. Interradicular bone of the upper jaw BV:C:30.89%±1.81, E:27.83%±1.44. Bone Activity: Bone Resorption(BR): C:19.16%±8.33; E:26.02%±9.27. Bone Formation(BF):C:30.13%±5.49; E:22.59%±6.94. Bone Rest(Re):C:50.18%±6.77; E:53.19%±4.77. **Conclusion:** Three months after diabetes induction osteopenia was observed in tibiae while it was not observed in interradicular bone. The decrease of BF and the increase of BR could indicate that the osteopenia would be showed in interradicular bone at longer time than that studied here.

Key words: Chronic Diabetes - osteopenia - interradicular bone.

42

EVALUATION OF FUNGAL INVASION IN PERIODONTAL CONNECTIVE TISSUE IN PATIENTS WITH THIRD MOLAR ERUPTION PROBLEMS

Robles M; Aguilar P; Puia S; Balsamo R; Nuñez C.; Grandinetti JA; Brusca MI
UAI. mmrc_2789@hotmail.com

Objective: To evaluate the invasion of yeasts in periodontal connective tissue patients with third molar eruption. **Materials:** We conducted an observational, prospective longitudinal. Dependent variable: third molar with pericoronitis. Independent variables carrying of Candida spp, Inclusion: Included in 30 consecutive adult patients aged 18 years, of both sexes with an indication for third molar. Study Group and with third molar pericoronitis Control group: patients with no third molar pericoronitis. Samples were taken in subgingival that secolocarón Eppendorf tubes with 0.5 ml of saline and TAB. Were performed simultaneously extended each study site coloring technique with Gram and Giemsa. Were performed making material, biopsy, the bags combined supragingival influencing 2 mm were placed in formalin and PBS. The latter were carried mortar and pestle and dissolved planted, and the same techniques were seized microbiological samples from subgingival pockets, with those from formalin, staining techniques were performed PAS, Grocott and Hematoxylin eosin. **Results:** in 42% of samples were isolated Candida spp. las crop samples periodontal pockets. With the technique of Pass and Grocott septate hyphae were observed in biopsies from the same pacientes.en Giemsa preparations were observed with yeast acompañantes.se bacillary structures observed in ellso suppurative inflammation with fungal hyphae infiltration by. **Conclusion:** Candida spp may play an important role in adherence to the soft tissues, and allow penetration, and DEVELOP opportunistic or commensal role and participate in pericoronitis.

Key words: third molar. Candida. Invasion





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

43

CYTOLOGY ORAL: EOSINOPHILIC RATIO ASSESSMENT IN CIRRHOTIC-ALCOHOLIC PATIENTS WITH DIABETES TYPE II. Flores VY¹; Montoliu C²; Rodríguez IA¹; Llompарт G²; Carda C²; Gómez de Ferraris ME¹ Faculty Dentistry, UNC, Argentina¹ and Dept of Pathology, University of Valencia, Spain². vivyflores@gmail.com

Introduction: alcoholic liver cirrhosis and type II diabetes are chronic metabolic diseases, which are associated often oral level changes manifesting as healing problems, infections, periodontal disease, tooth decay, and hypo sialosis salivation and oral mucosal involvement in general. **Objective:** To assess the rate of maturation in eosinophilic or buccal smears of patients with both conditions alone or in combination. **Methodology:** The studies were conducted in patients 45 to 65 years in two universities: Cordoba (Argentina) and Valencia (Spain). Informed consent and following the same methodology of work, was sampled by exfoliative cytology of the lateral portion of the tongue, by "cytobrush". Spread on a slide fixed with "Cytospray" technique was used Pap. In each preparation was analyzed cell morphology, dye ability, presence of microbial flora and / or inflammatory infiltrate and were imaged at 100 magnifications of 10 random fields with a Leyca DM2500 photomicroscope. The images were digitized and analyzed with the Image Pro-Plus 4.5, and was obtained the percentage of eosinophilic cells (eosinophilic ratio = IE) using data were tabulated and analyzed through descriptive statistics by using the "Origin 8.0". **Results:** Group Argentina: IE in type II diabetics was = 41% (14 patients), alcoholic cirrhosis (15 patients) = 58.7% = 72.4% and controls (21 patients). In samples of diabetic micronuclei was observed, binucleation, folds and abundant amphophilic cells. Group Spain: IE in cirrhotic alcoholics was = 45% (32 patients); cirrhotic Diabetic + = 38% (15 patients) control = 68.8% (29 patients). Most were identified microbial flora compared with controls and in cirrhotic + Extended diabetic, increased inflammatory infiltrate. **Conclusion:** IE both pathologies (alone or combined) was generally be lower than the control. This indicates a deficient epithelial maturation process is linked to metabolic disorder where the patient and alcoholic cirrhosis is associated with a type II diabetes, the oral mucosa is severely affected. Grant SECyT UNC Res 162/2012

Key words: oral cytology, eosinophilic ratio, type II Diabetes. Alcoholic-cirrhotic

44

EFFECT OF METHOXAMINE AND PROPRANOLOL ON BONE COMPETENCE IN AN ANIMAL MODEL OF GROWTH RETARDATION. PRELIMINARY STUDY. Agüero Romero A, Lezón ChE*, Pintos P, Champin G, Alippi RM, Bozzini C, Boyer PM. Department of Physiology, School of Dentistry, University of Buenos Aires, Argentina. clezon@fisiologia.uba.ar

While central control of bone remodeling is proposed to be mediated through β_2 -adrenergic receptors, effects of α_1 -adrenoceptors activation on osteoblasts were still elusive. **OBJECTIVE:** The aim of the present work was to study the effect methoxamine (M) and propranolol (P) on bone remodeling and femoral competence in an animal model of nutritional growth retardation (NGR). **Methods:** Weanling male Wistar rats were randomly assigned to eight groups: control (C), C+P (CP), C+M (CM), C+P+M (CPM), NGR, NGR+P (NGRP), NGR+M (NGRM) and NGR+P+M (NGRPM). C with/without P or M were fed freely with the standard diet. NGR with/without P or M received, for 4 weeks, 80% of the amount of food consumed by C and CP respectively, the previous day, corrected by body weight. Propranolol (7mg/Kg/day) was injected ip 5 days per week, for four weeks in CP, NGRP and NGRPM rats. Methoxamine (2mg/Kg/day) was injected ip 5 days per week, for four weeks in CM, NGRM and NGRPM rats. C and NGR received saline injections at an identical dosage regime. Body weight and length were determined during the experimental period. Dietary intake was registered daily. Animals were sacrificed after 4 weeks of food restriction. Immediately, femurs were dissected and weighed, and mechanical studies (Instron 4442) were performed. Serum sCTX and osteocalcin were determined. **Results:** Food restriction induced detrimental effects on body and femoral growth, and bone competence in NGR vs C ($p < 0.01$). P and M do not modify anthropometric and bone morphometric parameters in NGRP, NGRM, NGRPM and CP, CM, CPM vs NGR and C, respectively ($p > 0.05$). However, bone competence in NGRP, NGRM and NGRPM vs NGR rats were significantly higher ($p < 0.01$). No bone competence synergistic effect was observed in NGRPM group. CTX was significantly higher in NGR vs all groups ($p < 0.01$). No significant differences were observed in sCTX levels between CP, CM, CPM, NGRP, NGRM, NGRPM and C ($p > 0.05$). Serum osteocalcin showed no significant difference between groups ($p > 0.05$). **Conclusion:** These results suggest that M and P attenuate the impairment of bone biomechanical performance exerting its effects by increasing bone mass and improving spatial distribution of bone material in the present model of growth retardation.

Key words: bone biomechanical performance, animal model of growth retardation.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

45

ADHESION AND DIFFERENTIATION OF DENTAL PULP STEM CELLS ON TOOTH SURFACES. Peydró S., Rojas-Lara N., Martín de Llano JJ., Sancho-Tello M., Ruíz-Sauri A., Peydró A., Carda C. (1) Faculty of Medicine and Dentistry, Unit of Histology, Department of Pathology, Universidad de Valencia; (2) INCLIVA; (3) CIBER BBM Carmen.Carda@uv.es

Aim: The differentiation capacity of the dental pulp stem cells (DPSC) to several lineages is one of the reasons for which they have been used as alternative method on tissue regeneration therapy. Dentin and cementum are two mineralized tissues. Their components could affect the DPSC differentiation process. For this reason the purpose of this study was to evaluate the use of dental tissues as an approach to induce DPSC differentiation to new cells with the capacity to generate a new specific matrix. **Methods:** DPSC were obtained from a young third molar and their phenotype was analyzed by flow cytometry. DPSCs were seeded in 24-well plates in contact with cross sections from dental roots previously obtained and cultured in a basal medium for several times (from 1 to 6 weeks). Ascorbic acid was added to some samples in order to induce collagen synthesis. Cell adhesion and proliferation was assessed, as well as the secretory activity and possible differentiation. After the incubation period samples were fixed, decalcified and processed for their analysis by light microscopy. **Results:** A good contact between DPSC and tooth surfaces was observed on the first days of cell culture, as assessed by phase-contrast microscopy. Cells proliferated until they reached confluence. DPSC cultures incubated for 4 to 6 weeks showed a greater adhesion on dental root surfaces, forming cell layers. These layers were more homogeneous on the cementum area than on the dentin surface. DPSC adopted the arrangement and morphology of pseudo-odontoblast when they were in contact to dentinal tubules openings. Cell cultured in medium containing ascorbic acid show an increased secretory activity when compared with those cultured in the absence of that additive. **Conclusion:** Tooth surfaces are a good biological environment for the adhesion and proliferation of dental pulp stem cells. These surfaces induce the differentiation of DPSC to cells that could form new dental tissues. Ascorbic acid increases the secretory activity of the cells.

Key words: DPSC, regeneration, differentiation

46

DESCRIPTIVE STUDY OF THE PERIODONTICS DISEASE IN PATIENTS WITH / WITHOUT ASSOCIATED MEDICAL RISK. Sub-Study. Study FEPP. Nieto M¹, De la Cruz G¹, Sarudiansky A¹, Lewin P², Rubio MC^{2,3}, Nicolosi L^{2,3}, Costa OR¹ Cátedra de Periodoncia¹ y Cátedra de Patología y Clínica Bucodental², Faculty of Dentistry. University of Buenos Aires. Cardiology Division. Hospital Español de Buenos Aires³. (Spanish Hospital of Buenos Aires³) mauricioenieto@gmail.com

Objective: To describe periodontics variables in patients (P) with medical risk (MR), prescribed with converting enzyme inhibition agents (CEIA) and without associated RM, with periodontics disease (PD) moderated to severe, before intensive periodontal treatment (IPT). **Methods;** Prospective study of cases and controls. P admitted to Endothelial Function and Periodontics Disease Protocol (FEPP) were admitted. All P signed the informed consent. These cases were considered: P with MR with high blood pressure (HTA) treated with C and controls: without associated MR and without prescription with CEIA. Inclusion criterium: PD moderate to severe, catheter depth (CD) equal or higher than 5mm, bleeding at catheter (B), bone loss (through radiography) and loss of clinical insertion (LCI), registered in at least 50% of present teeth. Everybody received IPT. Atherogenic risk factors were gathered. CD, B and LCI were registered. The ITP consisted of curettage and smoothing of affected areas in only one session with infiltrating anesthesia using Gracey rigid curettes (Hu-friedy) and ultrasound (woodpecker) after antibiotic prophylaxis and chlorexidine mouthwash 0,12% without dilution during a minute. Teaching of hygiene and cleaning carried out. Statistical analysis: The statistical packet SPSS 16 was used. The following tests were made: t-test of Student, MANOVA and linear regression analysis (a higher than 0.05, trust intervals 95%). **Results:** 52 patients were admitted, aged 58 ± 10 years, 42.3% women, groups with CEIA 27 (51.9%), and without CEIA 25 (48.14%). 54.4% of P had HTA. The P of group cases had a media LCI 5,17mm, CD 3,76mm and controls LCI 4,27mm, CD 3,83mm. Maximum values obtained in both groups of LCI 8,97mm and CD 5,93mm. No statistically significant differences in the characteristics of PD between cases / controls. **Conclusion:** No differences found regarding presentation of PD between patients with HTA prescribed with CEIA and those without MR. When evaluating other risk factors, it wasn't possible to determine quantitative discrepancies. No P presented complications during ITP. Work carried out with a subsidy of Erasquin programme. 2009-2011. FOUBA.

Key words: full mouth disinfection, periodontics, endothelial function.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

47**TITANIUM DIFFUSION IN SHINBONE OF MICE WITH OSSEOINTEGRATED IMPLANTS**

Grenón M S1, Sánchez H J2, Fontana S1, Robledo J2, Ibañez J C3

Facultad de Odontología UNC1, Facultad de Matemática Astronomía y Física UNC 2 y Escuela de Odontología UCC3. mirigren@odo.unc.edu.ar

The use of titanium dental implants for replacement of missing teeth is increasingly frequent. Titanium is a transition metal extremely resistant to corrosion, it can be found at trace levels in tissues and body fluids in concentrations not well established. **Objective:** To investigate titanium diffusion in isolated bone and to establish diffusion parameters. **Methods:** Small titanium foils were implanted in shinbones of 6 male Wistar rats. After osseointegration, euthanasia was induced in rats after one month and two months. Tibias were included in acrylic, cut, and analyzed using X-ray fluorescence at the LNLS (Brazil). Linear scanning of between 15 and 40 points were carried out with 700 to 1000 sec / pt. Spectra were analyzed with specific programs (AXIL, Peakfit and Origin). Fittings were performed with Voigt function for high intensity peaks and Gaussian for low intensity peaks, minimizing χ^2 . **Results:** Measured intensities (I) follow a Poisson distribution and their relative error ($\sqrt{\sigma} / I$) does not exceed 10% in any cases. Net intensities corresponding to an element do not represent a direct measurement of the concentration of that element due to matrix effects, enhancements, and density of the sample. For octocalcium phosphates, calcium is a major element and its intensity is proportional to the concentration. In addition Ca concentration is correlated linearly with the density and the degree of compaction of the crystalline structure. Hence, the intensity ratios Ti / Ca were taken and analyzed. Graphs of intensities (Ti, Ca and other elements) vs. position and the ratio Ti / Ca vs. position are representative of the behavior of these

elements. These ratios were fitted with exponential functions and the derivatives $\frac{\partial^2 (\frac{Ti}{Ca})}{\partial x^2}$ were calculated. As the diffusion equation is a 2nd degree equation in the position these derivatives are proportional to the diffusion coefficient of titanium. **Conclusion:** The results obtained show values that denote a net effect of diffusion from the implant to the outside of the newly formed bone.

Key words: titanium, dental implants, diffusion, fluorescence

48**DEVELOPMENT OF "THE HEALTHY SNACKS STORE" LIKE A STRATEGY OF HEALTH PROMOTION**

Bella M *, Moncunill I Gigena P, Agüero N, Giordano S, Herrera A, Hilas E, Cornejo LS Facultad de Odontología - UNC .

bellamarcelabella@gmail.com

As part of an action research project was implemented "A healthy snack's store" in a Córdoba city school with social vulnerability. **OBJETIVE:** To contribute to improve the oral health of children promoting healthy feeding standards, while they are at the school. These standards were designed in accordance with their needs, expectations and potential of their community. **METHOD:** 375 children and their families were involved, together with teachers and staff of the at Miguel Luciani's school. We worked in four steps: diagnostic, design, implementation and evaluation, using qualitative and quantitative techniques in the searching of information. Diagnostic Step: we use a self-administered questionnaire, a scripted interview, the observation of food consumed during recess by the kids, and photographic record of the school store and rubbish bins, to determine the consuming habits of children at the recess and which food are sale at the school store. Design and Implementation Steps: from the diagnostic results, we carried out workshops with the children, their families and the school staff, in which one was, designed the "A healthy snack's store" and then the new store were applied. The organization, preparation, processing, sale and distribution of the food, was in charge of the 6th grade students and their teacher. Evaluation Step: new interviews; observation and photographic record of the children's recess and the rubbish bins of the school store during the implementation of the "healthy snack store" were done by our team. **RESULTS:** * In the implementation step of the "healthy snack's store", the supply and consumer of healthy food was prevailed: dairy, jellies, cereals and fruit salads;* the school changed the supply products, incorporating healthy ones * the school community appreciates and supports "The healthy snack Store". **Conclusion:** the design and implementation of health promotion strategies requires an integration methodological that can address the issues from a perspective collective, complex and interdisciplinary, which regard the needs, expectations and potentials of the participating actors. With SPU grant No. 1545-1511 File No. 3504/11.

Key words: Health promotion contextualized- healthy feeding -action research





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

49

RELATION BETWEEN ANGLES AND DISTANCES OF AXES OF LATERAL UPPER CANINES AND INCISIVES IN RADIOGRAPHIC IMAGES

Wuscovi LF, Aragón HN, Gordillo ME, López ME.
Facultad de Odontología. UNT. luisfwuscovi@hotmail.com

In its eruptive passage, the upper canine germ is related to the upper lateral incisor. The radiographic study of that relation is important since the canine in some cases can produce root resorption of the lateral incisor and this one as well, is the eruptive guide of the canine. **Aim:** To determine the association between the angle formed between the axis of the canine and the lateral incisor and the distance of the tie point of the axes to the incisal edge as the radiographic variables. **Methodology:** 90 radiographic studies were made in children of both sexes, between 7 and 11 years old, using a systematized technique. The images were digitized and with the program Image Tool there were measured: a) the angle formed between the greater axis of the upper canine and the greater axis of lateral upper incisor b) the distance in millimeters from the incisal edge of the lateral incisor to the tie point with the greater axis of the upper canine. The SPSS program for Windows Version 11 was applied to determine the relation between angles and distances. The correlation test of Pearson was used to calculate the association of both variables. **Results:** From the statistical analysis the average values for angles was 6.2079 ± 15.47528 and for distances, 5.6023 ± 15.0177 . The correlation coefficient was $r=0.33$. **Conclusion:** The angle formed between the axis of the canine and the lateral upper incisor and the distance to the tie point from the incisal edge are moderately associated, reason why other variables associated to these factors should be considered as possible indicators of the upper canine eruption. Work partially subsidized by CIUNT

Key words: angular measurements/ radiographic images

50

PEPTIDE SEQUENCE OF THE SARCOPLASMIC RETIUCULUM CALCIUM PUMP FROM MASSETER MUSCLE.

Sánchez G*, Di Croce D, Trinks P, Takara D. Biophysics Department and Anatomy Department. School of Dentistry. University of Buenos Aires. Argentina.
gabriel@odon.uba.ar

Aim: we have previously reported lower calcium transport capability and enzymatic activity of the sarcoplasmic reticulum calcium pump (SERCA) from masticatory muscles, along with mixed expression of the isoforms of this pump. Because the expression of a typical isoform in masticatory muscles might account for those functional differences, the aim of this work was to determine and characterize the aminoacid sequence of the masseter SERCA. **Methods:** male New Zeland rabbit (2 kg, 6 m.o.) masseter muscles (n = 20) were sampled. RNA wa extracted (Chomczynski y Sacchi, 1987) and mRNA separated by chromatography, from which cDNA was obtained by RT-PCR, being later amplified by RACE-PCR. Deoxinucleotides sequencing method was used for cDNA sequencing. The DNA sequence was analyzed using MacDNASIS and its homology was compared to GenBank® (NIH) using BLAST® algorithm. **Results:** The SERCA family isolated from masseter muscle revealed a nucleotide sequence of 2970-3003 bp and 990-1001 aminoacids (100-110 kDa). The analysis of the aminoacid sequence and the secondary structure deduced for SERCA1a, SERCA2a y SERCA2b evidenced 90%, 92% and 98% identity compared to the corresponding isoforms described in rabbit fast-twitch skeletal muscle, slow-twitch skeletal muscle and smooth muscle, respectively. **Conclusion:** the mixed expression of different SERCA isoforms in masseter muscle, rather than the presence of a SERCA isoform expressed exclusively in masticatory muscles, might account for the differences reported in enzymatic activity and calcium transport capability. Grant UBACyT 20020110100082.

Key words: Ca-ATPase, sarcoplasmic reticulum, peptide sequence, masticatory muscles.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

51

EXPERIMENTAL ENDODONTICS: CALBINDIN EXPRESSION IN NEURONS OF THE TRIGEMINAL SUBNUCLEUS CAUDALIS. Canzobre MC *, H. Rios . Department of Histology and Embryology, School of Dentistry, UBA /Institute of Cell Biology and Neuroscience "Prof. E. De Robertis ", School of Medicine, UBA – CONICET marielacanzobre@yahoo.com.ar

Calbindin is a calcium-binding protein with functions of "protein sensor" which is able to facilitate the regulation and homeostasis of certain cellular mechanisms. In neurons, the increase in cytosolic calcium concentration allows to modulate some functions, e.g. neuronal excitability or gene expression. In previous studies we showed neuroplasticity in immunoreactive calbindin (CB+) trigeminal neurons and its role in the modulation of the nociceptive pathway after pulp inflammation (SAIO 2006). Here, we performed this study to clarify the role of CB in neurons of the mechanoreceptive pathway. Nociceptive information is transported to the laminae I and II of the caudal trigeminal subnucleus (Vc) from pulpal and periodontal tissues while not nociceptive afferents, as periodontal mechanoreceptors, reach the laminae III and IV. **Objective:** To analyze the expression of CB+ and its distribution in the different laminae of Vc in a model of experimental endodontic with periapical inflammation. **Methods:** In Wistar female rats, 50 days old, endodontic treatment was performed in the left mandibular 1st molar. Animals were sacrificed by intracardiac perfusion, at 7 and 14 days. The brains were processed for immunocytochemistry for calbindin D28k (Swant Inc). Vc was analyzed, comparing ipsilateral side with its paired contralateral side and with the group of control animals. **Results:** CB+ nociceptive neurons of laminae I and II at the 14th experimental day showed significant differences in the number of neurons expressing this protein between the ipsilateral (24.32±1.69 cells/area) and contralateral side (19.56±1.16 cells/area, $p=0.04$). In laminae III and IV differences in the number of neurons CB+ was observed after 14 days. Average values of the ipsilateral was 5.87±0.56 cells/area vs. contralateral side 4.39±0.48 cells/area $p=0.003$. **Conclusion:** ipsilateral CB+ expression at the 14th experimental days suggests that the activation of mechanoreceptors is modulated at the level of laminae III and IV local circuits and that calbindin D28k could be involved in the orofacial modulation of mechanoreceptive and nociceptive pathways. PIP00404.

Key words: experimental endodontics - calbindin - trigeminal

52

PREVALENCE OF TEMPOROMANDIBULAR DISORDERS (TMD) IN CHILDREN

Guitelman I, Fridman D, Mondello A, Farah C, But Gusain M, Grinberg J, Biondi A, Cortese S Department of Comprehensive Children's Dentistry. Faculty of Dentistry. University of Buenos Aires. Argentina. ingridpei@intramed.net

Objective: To estimate the prevalence and type of TMD in children from 10 to 15 years of age and analyze its relationship with sex, age, myofunctional and postural alterations. **Methods:** Patients of both sexes between 10 and 15 years of age seeking for dental attention at the Department of Comprehensive Children's Dentistry of the Faculty of Dentistry of the University of Buenos Aires between July 2011 and July 2012 which gave informed consent. Children with developmental problems, compromised health, psychiatric and neurological disorders were excluded. Patients were assessed with the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) by four standardized pediatric dentists (Kappa 0.88; IC 0.80-0.96). Kendall Static Posture was evaluated by the kinesiologist from photographs and speech therapists used the Adapted Marchesan Orofacial Myofunctional Evaluation. **Results:** The sample consisted of 110 children average age 12.7 SD 1.7; 48.18% male. Prevalence of TMD was 34.54% (CI 25.71-44.23). TMD group showed greater age (Mode 15) ($p = 0.05$), more women ($p = 0.03$) and bruxism ($p = 0.00$). Regarding to the type: 88.28% belonged to the CDI/TMD Group IA with myofascial pain and 2.3% to IB with mouth opening limitation. 7.9% belonged to Group II with disc displacement without pain. 1.52% belonged to Group I and II with articular compromise and myofascial pain. No significant differences were found in any of the other variables tested. **Conclusion:** In this sample of pediatric patients TMD prevalence was 34.54%, most frequently with muscle pain and in women, related to bruxism and without relationship between TMD and postural alterations or oral dysfunctions. Premio Cotta Ramusino 2011

Key words: Temporomandibular Disorders, children, prevalence.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

53

SERUM ANTIBODIES AGAINST BETA1-ADRENERGIC RECEPTOR IN PATIENTS WITH SEVERE CHRONIC PERIODONTITIS. ROLE OF PGE₂ AND SCD40L.

Segovia M., Borda E. Pharmacology Unit, School of Dentistry, Buenos Aires University and National Research Council (CONICET). Buenos Aires, Argentina. marcelasegovia@gmail.com

Objective: Previously, we have shown an association between chronic periodontitis (CP) and heart disease. We also describe serum antibodies from CP patients with the potential capacity to interact with gingival and myocardial β_1 -adrenergic receptors (β_1 -AR). In this work, we investigated the presence of auto-antibodies (IgG) in the serum of patients with advanced CP, its interaction with β_1 -AR of isolated rat atria and the participation of serum levels of sCD40L and PGE₂ in this phenomenon. **Methods:** Sera were obtained from 12 patients with CP and 12 healthy subjects. By ELISA assay, using a synthetic peptide corresponding to the second extracellular domain of human β_1 -AR as antigen we detected the anti- β_1 -AR IgG and the serum levels of SCD40L and PGE₂ in patients and healthy individuals. **Results:** All of the patients studied, reacted positively against the synthetic β_1 -adrenergic peptide (optical density at 405 nm: healthy subjects: 0.198 ± 0.02 and CP patients: 1.318 ± 0.08). Also by ELISA assay, we found that PGE₂ and sCD40L levels are increased significantly in CP patients comparing to healthy individuals, [sCD40L ng / ml: CP patients: $2,561 \pm 0,151$, n=12; healthy individuals: 0.216 ± 0.015 , n=12, $p < 0.0001$]; [PGE₂ pg / ml: CP patients: 277 ± 19 , n=12; healthy individuals: 35 ± 2.1 , n=12, $p < 0.0001$]. Furthermore, we established a positive correlation between the levels of PGE₂ and sCD40L and also positive correlation was observed too between the levels of PGE₂ and sCD40L and the presence of serum anti- β_1 -AR IgG. **Conclusion:** We concluded that the presence of β_1 -AR IgG in the sera of patients with chronic CP is able to interact with cardiac β_1 -AR. From this interaction, we detected in the sera of patients with CP an increment of sCD40L and PGE₂ compared to those found in healthy individuals (controls). These results demonstrate the presence of auto-antibodies against cardiac β_1 -AR and its ability to interact and activate cardiac β_1 -AR. These auto-antibodies could modulate the increased levels of serum sCD40L and PGE₂, which in turn, could be a factor that cause or aggravate the development of cardiac dysautonomia.

Key words: chronic periodontitis, heart disease, auto-antibodies

54

EVALUATION OF ANESTHETIC POTENCY BETWEEN DIFFERENT VOLUMES CARTICAINE CLORHIDATO 4% FOR ENDODONTIC TREATMENT OF FIRST AND SECOND MOLARS WITH IRREVERSIBLE ACUTE PULPITIS. Martinez PA; Lenarduzzi AL; Corominola PL; Buldo M; Fernandez-Solari J; Elverdin JC; Rodriguez PA. FOUBA . martinezpablo_@hotmail.com

Troncular anesthesia of the inferior dental nerve is the most commonly used technique for endodontic treatments. However, in patients with acute irreversible pulpitis, anesthesia is often insufficient to proceed with endodontics, requiring additional anesthesia. **Objective:** To study the anesthetic efficacy of inferior dental nerve obtained with 1 or 2 of Totalcaina anesthetic tubes in patients with acute irreversible pulpitis. **Methods:** We randomly selected 48 patients with a diagnosis of acute irreversible pulpitis in first and second molars, to perform endodontic treatment. The anesthesia used was carticaine hydrochloride 4% (Totalcaina, Bernabo laboratory, ind. Arg) that is presented in a tube of 1.8 ml. Patients were randomly divided into 2 groups of 24. Group 1 received two anesthetic tubes via troncular to inferior dental nerve and group 2, one tube. Anesthesia was left on for 10 minutes until the patient feel counterpart lip anesthetized to start the treatment. The success of anesthesia was defined as the ability to achieve openness and instrumentation of the ducts without pain, without the need to supplement with intraperiodontal and/or intrapulpal anesthesia. **Results:** Of the 24 patients in group 1, only 7 showed blocking pain sensation with the application of 2 anesthetic tubes, while of the 24 patients in group 2, only 5. The chi-square test showed no significant differences between the treatments ($p > 0.05$). In the remaining 17 and 19 patients in group 1 and 2, respectively, it was necessary to administer additional intraperiodontal and/or intrapulpal anesthesia to completely block the sensation of pain. **Conclusion:** No significant differences were shown in anesthetic efficacy on the inferior dental nerve between 1 and 2 of tubes of Totalcaina in acute irreversible pulpitis of molars. In most cases, administration of additional anesthesia was necessary to achieve complete pulpal anesthesia.

Key words: irreversible pulpitis, carticaine Clorhidato 4%, endodontic treatment.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

55

COMPARATIVE STUDY OF CUTANEOUS VASCULATURE IN DIFFERENT AGES: A MORPHOMETRIC AND IMMUNOHISTOCHEMICAL ANALYSIS. Marcos-Garcés V1, Molina P1, Sancho-Tello M1,2,3, Martín de Llano J1,2,3, Montoliu C1,2, Valencia G4 Carda C1,2,3, Ruiz-Saurí A1,2,3. 1FACULTY OF MEDICINE AND ODONTOLOGY, HISTOLOGY UNIT, DEPARTAMENT OF PATHOLOGY, UNIVERSITY OF VALENCIA, SPAIN; 2 INCLIVA; 3 CIBER BBM; 4 UNIVERSITY OF THE NORTH. BARRANQUILLA, COLOMBIA. Carmen.Carda@uv.es

Objective: Our aim is to study the vascular distribution in thin skin and objectively quantify the possible changes that occur as a function of age. **Methods:** 24 thin skin biopsies of different ages were obtained, between 2 months and 84 years, stained with H-E; we followed a blind design to mask the age. For morphometric quantification, we used vessel staining with CD31 immunohistochemistry. In each case, five photographs were taken at 100x magnification for both the papillary and the reticular dermis. Total number and area of vessels were measured and the median of each case was calculated. The statistical analysis included linear, quadratic and cubic regressions; ANOVA test; and Student t-test. A $p < 0,05$ was considered statistically significant, and $p < 0,10$ was considered marginally significant. **Results:** Linear regression showed a reduction in the number of vessels as a function of age in papillary dermis ($p=0,003$) and in reticular dermis ($p=0,025$). Mean vessel area didn't change as a function of age in the papillary dermis, but in the reticular dermis it increased with age following a linear regression ($p=0,038$). It was also demonstrated that papillary dermis was more vascularized than reticular dermis (Student t-test with $p < 0,05$); however, mean vessel area didn't show significant changes as a function of the localization. The ratio between the number of capillaries and the number of arterioles/venules decreased as a function of age, following a linear regression in the papillary dermis ($p=0,058$) and a quadratic regression in the reticular dermis ($p=0,098$). This ratio didn't show changes as a function of the localization. **Conclusion:** As well as corroborating that the papillary dermis is more vascularized than the reticular dermis, we were able to objectify that, all throughout life, a decrease of the number of vessels in the papillary and reticular dermis occurs, and this loss is more evident amongst capillaries. This will explain, in part, the processes of development and aging of the skin.

Key words: Morphometry, Vascularization, Skin

56

DENTIN BOND STRENGTH OF SELF ETCHING RESIN CEMENTS

Chávez Lozada J, Urquía Morales C.
OPERATIVE I "B", FACULTY OF DENTISTRY. UNC.
juliochavezlozada@yahoo.com.ar

Indirect restorations must be fixed to dental structures by means of luting agents to avoid the looseness and achieve an adequate marginal sealing. The **purpose** of this work was to evaluate the dentin bond strength of new self etching resin cements. **Methods:** 75 flat dentin surfaces were obtained by grinding recently extracted third molars. They were randomly assigned into five groups according to different experimental luting agents; Group 1: Relyx U100 (3M/ESPE), Group 2: Bis Cem (Bisco), Group 3: Max Cem (Kerr), Group 4: SeT (SDI) and Group 5: Relyx ARC (3M/ESPE), Control. Dentin samples for groups 1 to 4 were not subject to any prior treatment, those of group 5 were conditioned for 15 seconds with a phosphoric acid gel at 35% (*Scotch Bond Etchant- 3M Co*) washed, dried, finally, adhesive system were applied. All materials were handled according to manufacturer's instructions. Afterwards, cylindrical 4.1 mm diameter ceramic specimens (IPS Empress 2 - Ivoclar/Vivadent) were bonded to dentin. Ceramic surfaces were etched with hydrofluoric acid and silaned according to indications. After a 24 hours storage in 100 % humidity at 37 °C, shear bond strength was determined by using an Instron testing machine at 1 mm/minute crosshead speed at 7, 14 and 21 days. **Results:** Data obtained were analyzed by using ANOVA and Tukey test, showing significant differences between materials ($p < 0,0001$), not so with time factor or its interaction. A) Conventional cement showed greater resistance than self adhesive cements. B) From the self etching cements, the best performance was obtained in Relyx U100 (10,08 MPa). C) In the remaining materials, values in decreasing order were: Bis Cem (6,36 MPa), Max Cem (5,45MPa) y SeT (3,17 MPa). **Conclusion:** The self-adhesive cements tested had lower adhesive strength than resin cements requiring dental substrate pretreatment (control group). This should be considered when performed your clinical selection, especially little retentive tooth preparations.

Key words: self etching cements, adhesion.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

57

RELATION BETWEEN EXPERIMENTAL PERIODONTITIS, SALIVARY GLANDS AND THE ENDOCANNABINOID SYSTEM. César Angel Ossola, Pablo Nicolás Surkin, Antonela Pugnaroni, Gonzalo Ezequiel Ortega, Juan Carlos Elverdin, Javier Fernández Solari. CÁTEDRA DE FISIOLÓGÍA, FACULTAD DE ODONTOLOGÍA, U.B.A. caossola@hotmail.com

It is known the importance of maintaining salivary gland wholeness since they have important functions in the oral cavity and healing processes. In this sense, we have proposed the following **Objective**: to evaluate the effect of submandibular (SMG) and sublingual (SLG) glands removal on lipopolysaccharide (LPS)-induced periodontitis, and to study possible alterations in both glands from male Wistar rats (300g) submitted to experimental periodontitis and treated with a selective agonist for cannabinoid receptor (CB) 2 (HU 308) or with antagonists for CB1 and CB2 receptors (AM251 plus AM630, respectively). **Methods**: the animals (6/group) received injections of LPS from *Escherichia coli* (20 µl, 1mg/ml) into the gingiva around the neck of the first upper and lower molars, three days a week (days 1, 3, and 5), during 6 weeks, to induce periodontitis. In one group, bilateral SMG and SLG were removed a week before injections started, while the two others were treated daily with topical solution of HU308 (500ng/ml) or AM251+AM630 (1µg/ml each one). On the other hand a sham group was injected with 20µl of vehicle (saline) in the sites described for LPS. After sacrifice, the alveolar bone loss was measured obtaining the distance between the cemento-enamel junction and the bone crest in the roots of the first molars. Prostaglandin E2 (PGE2) content in SMG and SLG was measured by RIA, except in rats with submaxilectomy. We used two-way ANOVA for statistical analysis. **Results**: the treatment with HU308 decreased the alveolar bone loss induced by LPS ($p<0.05$), while the treatment with AM251+AM630 increased it ($p<0.05$), as well as like the submaxilectomy ($p<0.01$). In the SMG and SLG, LPS increased PGE2 content ($p<0.01$), which was prevented by the treatment with HU308 ($p<0.05$), although AM251+AM630 did not show a pronounced effect. **Conclusions**: the lack of functional SMG and SLG increased the tissue damage induced by experimental periodontitis. On the other hand, LPS as well as cannabinoid receptors ligands, applied to gingival tissue, induced different responses from salivary glands, which denote the oral health degree.

Key words: Salivary glands, periodontitis, endocannabinoid system and prostaglandin E2

58

WHY THE USE OR NOT OF GLASS IONOMER CEMENTS IN DAILY PRACTICE. Urquía Morales C, Brasca N, Girardi M*, Ríos A, Bonnin C, Chavez J, Delgado A, Joeques S. Operative I^B Faculty of Dentistry and Economic Sciences. UNC.ARG. nbrasca@odo.unc.edu.ar

Introduction: Glass ionomer cements (GIC) are used as biomaterials due to their many clinical applications and advantages. **Objective**: To determine whether professionals use glass ionomer cements in their daily practice or not and to try and identify the reasons why or why not. **Methods**: Data were obtained from an anonymous self-administered questionnaire, with closed questions given to 148 dentists with an average of 10 years of practice, taken at random from the Cordoba's Dentistry Association database. **Results**: Among those interviewed, 80.41% confirmed that they use GIC. The other 19.59 who do not use it claimed that it is too expensive or that 89.66% of health insurance entities do not cover the costs. Among those who use it, 56.08% state that they use it as base or filling, though preferring photopolymerization as hardening system (56.76%). When considering ionomer cement advantages, 53.38% pointed out its fluoride liberation and its physical and mechanical properties similar to dentine. Regarding its disadvantages, 54.73% claimed that it requires a very precise implementation plus its high cost. When considering its purchase, the selection criteria depend on the seller's advice and the material cost (54.73%). **Conclusion**: Glass Ionomer cement is used by a high percentage of general dentists due to its many advantages, despite not being included on the health insurance entities' nomenclature and despite its high cost.

Key words: Glass ionomer cements, use in daily practice.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

59

POST-TOOTH EXTRACTION TISSUE REPAIR UNDER HYPOSIALIA: A NEW METHOD OF STUDY.

Mohn C1,2, Steimetz T3, Pugnaroni A1, Gallego V1, Fernandez-Solari J1,2, Elverdin J1, Guglielmotti B2,3. Department of Physiology FOUBA1, CONICET2, Department of Oral Pathology FOUBA3. claumohn@yahoo.com.ar

Saliva plays a key role in oral tissue homeostasis. In previous works we encountered (Mohn et al 2011) exacerbated inflammatory response during the first hours of the post-tooth extraction tissue repair process in rats with submandibulectomy-induced hyposialia (SMx), as shown by an increase in TNF α and nitric oxide levels and in the number of polymorphonuclear cells, and delayed organization of the clot. **Objective:** To systematize the collection of soft tissue samples to evaluate post-tooth extraction tissue repair in SMx at 7 and 14 days. **Methods:** Forty 21-day-old Wistar rats were assigned to one of 2 groups: SMxG and ShamG. On day 7 post-surgery, bilateral extraction of the first lower molars was performed under i.p. anesthesia (Guglielmotti et al. 1985). Animals were euthanized 7 and 14 days post-tooth extraction in keeping with the School of Dentistry UBA Ethics Committee guidelines. The mandibles were resected. One hemimandible was processed for embedding in paraffin; sections were obtained at the level of the mesial alveolus and were stained with H-E. A sample of soft tissue was obtained from the contralateral alveolus using a 2mm \varnothing punch, and processed for determination of PGE, TNF α and TBARS. **Results:** Epithelialization was incomplete in both groups at 7 days; SMxG showed more inflammatory cells than in the ShamG. Complete epithelialization was observed at 14 days; a slight inflammatory infiltrate was found to persist in SMxG. PGE levels were higher in SMxG compared to ShamG at both 7 and 14 days ($p < 0.01$ and $p < 0.001$). TNF α was significantly higher in SMxG ($p < 0.05$). Levels of TBARS were not affected by SMx. **Conclusion:** The results obtained with the methodology presented herein suggest that inflammatory response markers are higher in SMxG as compared to ShamG, as shown by TNF α tissue levels. No tissue damage or lipid peroxidation was observed during these early stages (7 and 14 days), which are characterized by greater repair and osteoblastic activity. The increase in PGE production in stages with elevated osteoblastic activity would seemingly indicate involvement of PGE in the regulation of the repair process. CONICET PIP 11220090100117, UBACYT 20020100100657 and 20020100100686

Key words: hyposialia, tooth-extraction, tissue repair, punch tissue sample

60

EFFECT OF EXPERIMENTAL HYPERCHOLESTEROLEMIA ON PERI-IMPLANT BONE REPAIR

KRIEGER ML1*, STEIMETZ T2, OLMEDO DG24, GELPI RJ 34, GUGLIELMOTTI MB 24. Departments of Oral and Clinical Pathology1 and Oral Pathology2, School of Dentistry UBA. Institute of Cardiovascular Physiopathology, School of Medicine UBA – CONICET3. CONICET4. mlaurakrieger@gmail.com

The mechanism of osseointegration may be affected by local and systemic factors. Rats are resistant to developing hypercholesterolemia and are an appropriate model to study the early stages of this condition. In previous *in vivo* studies (Krieger et al 2005, 2008) we demonstrated that exogenous cholesterol alters bone remodeling in the periodontal alveolar cortical bone of interradicular bone (increase in bone resorption and decrease in osteogenesis). In addition, clinical studies have shown positive correlation between hypercholesterolemia and the decrease in bone density associated with osteopenia and osteoporosis. **Objective:** To evaluate the effect of experimental hypercholesterolemia on peri-implant bone repair. **Methods:** Twenty male Wistar rats, 100g body weight, were assigned to one of two groups: Control Groups (CG): fed standard diet "ad libitum", and Experimental Group (EG): fed 2% cholesterol diet "ad libitum", for 30 days. Lipid profiles were determined at t_0 , t_{15} and t_{30} (TCh, HDL-Ch, Non-HDL-Ch, and TG). At 15 days, when changes in the lipid profile begin to occur, a titanium laminar implant * was placed in one of the tibiae. Rats were euthanized 15 days post-implantation in keeping with the NIH and School of Dentistry UBA Ethics Committee guidelines. The tibiae were resected, fixed, radiographed, and processed for embedding in methyl methacrylate. Cross sections perpendicular to the longest axis of the implant were obtained and stained with 1% toluidine blue for histologic examination. **Results:** The histologic study showed alterations in peri-implant bone architecture in EG, and different shaped and sized osteocytic lacunae. The bone surface in contact with the bone marrow differed between CG and EG, having a more irregular appearance in EG. **Conclusion:** In the experimental model used herein, hypercholesterolemia caused a delay in the transition from woven bone to lamellar bone, which may be related to altered osteoblastic and osteoclastic activity. Grants: CONICET PIP 11220090100117, UBACYT 20020100100657. * Implant Vel.

Key words: hypercholesterolemia; metallic implants; bone repair





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

61

HISTOLOGIC STUDY OF THE PERIODONTAL ALVEOLAR CORTICAL BONE UNDER LOW FRICTION ORTHODONTIC FORCES

STEIMETZ T 1, BRUNO IG 2, MATEU ME3 , GUGLIELMOTTI MB 1, 4 . Departments of Oral Pathology 1, Radiology2, and Orthodontics3, School of Dentistry-UBA. CONICET4. tammysteimetz@gmail.com

In a previous study we developed an orthodontic appliance, specially designed to fit rats, using NiTiCu archwires, (Bruno IG et al, 2011), which reproduced the Damon System, and we performed macroscopic, radiographic, and microscopic evaluation of the transverse response 72 hours post-movement. **Objective:** To perform microscopic evaluation of periodontal alveolar cortical bone response to the application of low friction forces during 6 days. **Methods:** Twenty male Wistar rats aged 2 months were i.p. anesthetized with 0.15 ml/100g body weight of ketamine/xylazine (4:1 solution), and fitted with an orthodontic appliance made with Ø 0.14" NiTiCu archwire, exerting a force of 2.95 ± 1.08 cN (SAIO 2011). Study models were made and occlusal radiographs (including a scale and sphere) were taken pre- and post-movement. After 6 days, the animals were euthanized in keeping with the NIH and the School of Dentistry University of Buenos Aires Ethics Committee guidelines. The upper maxillae were resected and processed for histologic examination; bucco-palatine oriented sections were obtained at the level of the distal roots of the first molars. **Results:** The microscopic study of the buccal and lingual periodontal alveolar cortical bone and interradicular bone showed the presence of osteoblastic surfaces and discrete areas of inactive resorption. In several regions inside the bone tissue, the reversal lines indicated bone resorption activity at the surface, and new bone formation was observed. No alterations in the histoarchitecture of the periodontal ligament were observed. **Conclusion:** These findings suggest that tooth displacement produce by low friction orthodontic forces caused a balance between resorption and new bone formation. CONICET PIP 11220090100117, UBACYT 20020100100657

Key words: experimental orthodontics; bone remodeling; NiTiCu

62

EPIDEMIOLOGICAL STUDY ON POST ENDODONTIC RESTORATION IN CÓRDOBA

Arena A, Moreno M, Gioino G, Gómez C, Lujan G., Carvajal M, Garofletti J, Brónstein M.
Chair "B" of Endodontics. Faculty of Odontology. U.N.C.
gabrielagioino@yahoo.com

A caries not treated on time may have effects on tooth structure, affecting pulp or apical-periapical tissue. Faced with this situation, the therapeutic options are endodontic treatment or extraction. In turn, the prognosis of its conservation depends on the crown reconstruction once the therapy is over. **Objective:** To know the evolution of endodontic treatments, linking its effects to the socio- economic conditions, cultural pattern and access to health services of the patients treated. **Methods:** Clinical epidemiological, interdisciplinary observational, prospective, descriptive, longitudinal study. Two groups of patients were formed who received endodontic therapy: Group 1: 73 patients who attended the Chair of Endodontics B, FO. U.N.C., treated by undergraduate students between the months of August-October, 2006. **Group 2:** 71 patients who attended endodontics post graduate courses of the COC and the Healthcare Service of the Chair, treated by dentists between the months of August-October, 2010. For the study, inclusion and exclusion criteria were taken into account. The patients were called and given appointments for a clinical-radiographic control half yearly, for a period of two years. Observation patterns were elaborated, sheets for the collection of clinical information, socio-economic and cultural condition and informed consent. **Partial results** of the study showed:**a)** From those who attended controls G1 (n: 73), G2 (n: 71) after 6 months (26% and 33% respectively) and 12 months (13 and 11 % respectively). **b)** As regards the literacy level, it was observed that 57.5% of G1 attended primary school, while in the G3, 49.3% attended secondary school. **c)** As regards income, it was seen that G1 patients had lower incomes than G2 ones. **d)** After 6 months, controls showed similar percentages in both groups; it is noteworthy that there was a high percentage with loss of provisional obturation. After a year, differences were more evident in the G2 group with definitive restorations (100%). **Conclusion:** In both stages patient attendance to controls was low. Most of them still had the dental pieces with endodontics, but without having received any kind of permanent crown reconstruction, which is considered a risk factor.

Key words: Endodontics, crown restoration, controls.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

63

TEMPOROMANDIBULAR DISORDERS IN PATIENTS WITH INDICATIONS FOR ORTHODONTIC TREATMENT: CLINICAL VARIABLES.

Tomasetti V; Bertolotti C; Altamiranda S; Palacios SB
Facultad de Odontología –UBA. palaciossb@gmail.com

The **aim** of this study was to analyze the clinical variables and the risk factor, temporomandibular disorders, orofacial pain and hypermobility in patients requiring orthodontic treatment. It took 64 adult patients of both sexes who attended the unit Craniomandibular Dysfunction and Pain, referring preauricular pain in masseteric region, joint sounds and hyperlaxity. Clinical history and pain measurement was performed using a visual analogue scale (VAS) whose value is 0-10. Se divided the population into two groups: group 1 (G1) with VAS 0-5 (mild-moderate pain) n = 45 patients and Group 2 (G2) with VAS 6 - 10 (severe pain) with n = 19 patients. statistical test was applied Chi-square for variables preauricular pain TMJ (temporomandibular joint), masseteric region, joint noise was = 25 711 with p = 0.000, also applied to the noise ATM and hypermobility was = 27 456 with p = 0.000. The average age for both sexes was 25 years. The results revealed a statistically significant difference. The conclusion of this presentation is to highlight that these clinical variables should be considered as risk factors in patients requiring orthodontic treatment.

Key words: temporomandibular joint, Orofacial pain.

64

SERUM AND SALIVA C-REACTIVE PROTEIN LEVELS IN ACUTE MYOCARDIAL INFARCTION. An EPSICA pilot study. Rubio MC¹², Ramos C³, Lewin P¹, González N¹, Fuentes R², Friedman S³, Nicolosi L¹². Dept of Oral and Clinical Pathology-School of Dentistry. UBA¹. Division of Cardiology Hospital Español de Buenos Aires² - Dept of Biochemistry. School of Dentistry. UBA³. Argentina. mcrubio@live.com.ar

The presence of C-reactive protein (CRP) in saliva provides an opportunity to non-invasive biological sample for diagnosis and prognosis of ischemic heart disease. However, salivary CRP reference ranges and its correlation with serum concentrations remains under research. **Objective:** The purpose of this study was to determine the correlation between serum and saliva CRP levels in patients with acute myocardial infarction (AMI). **Methods:** a prospective preliminary study was undertaken. AMI was characterized by laboratory, clinical and electrocardiographic criteria. The diagnose was defined by increased serum creatine phosphokinase (CPK) and troponin T (TnT) concentrations, in addition to one of the following criteria: a chest pain for more than 20 minutes at rest and electrocardiographic changes in ST/T at least in two contiguous leads. The informed consent was obtained from all participants prior to their enrollment in the study. The protocol was approved by local Ethical Committee. Twenty four hours after the coronary event, CRP (mg/L; in serum and saliva) and TnT (serum) were determined. Controls will follow a similar protocol. Statistical analysis: data were analyzed by the statistical package SPSS 16, t-test of Students, Kolmogorov-Smirnov and the Spearman correlation coefficient were included. Confidence intervals at 95% and $\alpha=0.05$ were set. **Results:** Twenty nine adult patients were admitted to the Dept of Cardiac Disease, Hospital Español, Buenos Aires with diagnosis of AMI and twenty healthy subjects were selected as controls, no differences between groups were found for age or gender (mean age = 51 ± 9 years; 72% were males). In AMI patients, a significant increase in serum CRP concentrations (33.34 ± 36.37; CI 95% = 19.42-47.25) were found when compared to saliva levels (2.44 ± 1.21; CI 95% = 1.97-2.90). Control group showed no differences among serum and saliva CRP levels (5.00 ± 2.09; CI 95% = 4.02-5.97 vs. 3.00 ± 0.85; CI 95% = 2.60-3.39, respectively). Besides, high serum CRP levels in AMI, no correlation in saliva was detected (t = 3.78 p < 0.001). **Conclusion:** In this preliminary study, no correlation between serum and saliva CRP levels was found in AMI patients. Further studies will be conducted.

Key words: C-reactive protein- acute myocardial infarction-saliva





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

65

IMPACT OF COMPLEMENTED ORAL HIGIENE IN THE PREVENTION OF PNEUMONIA ASSOCIATED TO VENTILATOR. González N¹, Cruz M¹, Fuentes R², Lewin P¹, Martínez D^{1,2}, Rubio M^{1,2}, Nicolosi L^{1,2}. Dept of Oral And Clinical Pathology. School of Dentistry, UBA¹. Division of Cardiology and Coronary Unit Spanish Hospital Of Buenos Aires². nidiagonzalez@ciudad.com.ar

Pneumonias associated to ventilator (PAV) are around 21% of patients submitted to cardiovascular surgery (CAS), producing increase between 50-70% post-surgical mortality. Although there are strong recommendations about decreasing microbial oropharyngeal flora, this complication is still a prevailing cause of post-surgical mortality. Oral hygiene cares are not easily carried out by this population. **Objective:** Estimate the impact of complemented oral hygiene before surgery, monitored by dentist, in the PAV, in patients submitted to CAS. **Methods:** experimental, prospective and longitudinal prevalence study. Patients before cardiovascular surgery were included. A dentist treated them in order to decrease microbial flora on their teeth and soft oral and oropharyngeal tissues. A dentist explained patients about brushing techniques and suggested using mouthwash based on chlorhexidine gluconate 12% during 72 hours before surgery. PAV is developed after 72 hours following extubation or after 48 hours of intubation. PAV diagnose was confirmed by computerized tomography of high resolution. **Results:** 100 patients were admitted with average age of $62.33 \pm 12.48\%$, 83% men. Myocardial revascularization surgery was carried out in 60.9%, valve replacement in 30.4% and combined surgeries 8.7%. Average days in hospital were 14.57 ± 14.73 (CI 95% 11.64-17.49). Average days of intubation were 2.32 ± 4.15 (CI 95% 1.49-3.14). Four patients presented PAV ($p=0.0006$; CI 95% 1.12-12.35) showing a statistically significant difference in the PAV, in comparison with prevalence documented in the bibliography corresponding to the 21% (CI 95% 13.75-30.52). **Conclusion:** Patients submitted to CAS and received complementary pre-surgical oral hygiene experienced a significant decrease in PAV incidence.

Key words: pneumonia, ventilator, cardiovascular surgery.

66

ASSOCIATION BETWEEN INSULIN RESISTANCE AND ORAL DISORDERS IN CHILDREN, PRELIMINARY STUDY. Casavalle P, Gonzales Chaves MM, Antona ME, Rodriguez PN, Friedman S. Department of Biochemistry, School of Dentistry. University of Buenos Aires. Argentina. maug.e.antona@gmail.com

The insulin resistance (IR) plays a predominant role in the onset of diabetes and may be present in obesity. Although oral alterations are described in obesity and diabetes in adulthood, it is unknown whether IR in childhood is associated with oral disorders. **Objective:** To estimate in a pediatric population, the prevalence of IR and its association with three periodontal parameters. **Methods:** A cross-sectional, prospective, observational, descriptive and a comparison study of independent samples were undertaken. Thirty-five children (aged= 10.7 ± 1.7 y) with diagnosis of obesity, who attended the Pediatrics Department, José de San Martín Hospital, Buenos Aires were included. They were grouped according to HOMA >2.5 (IR) and below this value as non IR (NIR). Plaque index (IP) (Silness-Loe, 1964), gingival index (GI) (Loe-Silness, 1963) and bleeding on probing (BoP) (Muhlemann, 1975), were recorded by calibrated dentists. Statistics: T-test, level of significance: $p < 0.05$. **Results:** 48.6% of obese children achieved HOMA value above 2.5 (17/35). In IR, the PI was 1.31 ± 0.5 vs. 0.8 ± 0.5 ($p > 0.05$) and the GI = 1.2 ± 0.5 vs. 0.7 ± 0.4 ($p > 0.05$). However, the BoP was 0.5 ± 0.4 and 0.2 ± 0.2 for IR and NIR, respectively ($p = 0.03$). **Conclusion:** These results suggest a high prevalence of IR in obese children, which is associated with oral manifestations not related to dental plaque. New studies are designed to elucidate the relationship between IR and oral alterations in childhood. Awarded by UBACyT 20020100100613 and UBACyT CO02.

Key words: insulin resistance-children-oral disorders





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

67

PREVALENCE OF DENTAL/ PERIODONTAL PATHOLOGY IN PATIENTS SUBMITTED TO CARDIOVASCULAR SURGERY. González N¹, Cruz M¹, Lewin P¹, Rubio M^{1,2}, Nicolosi L^{1,2}. Dept of Oral and Clinical Pathology, School of Dentistry. UBA¹. Division of Cardiology Hospital Español of Buenos Aires². nidiagonzalez@ciudad.com.ar

Objective: Estimate prevalence of dental and periodontal pathologies in patients submitted to cardiovascular surgery. **Methods:** After signed consent, adult patients were included in Cardiovascular Surgery plan (CAS) between April 22nd and June 22nd 2012. All patients were examined by dentists 72 hours before surgery. Dental and periodontal parameters evaluated. All dental pieces were evaluated in 4 sites per piece (M-D-P/L-V). There was periodontal bleeding at evaluation (PB), probing depth evaluation (PD), and clinical insertion level (CIL); based on the values of CIL periodontal diagnosis was made using the classification of the AAP-1999. Epidemiological records were issued as CPOD, gingival and plaque indexes (Loe and Sillness). Patients with bucodental pathology requesting immediate solution, treated before surgery. Statistical analysis: data were analyzed by the statistical package SPSS 16, t-test of Students and ANOVA and analysis of linear regression were included. Confidence intervals (CI) at 95% and $\alpha=0.05$ were set 100 patients included. 83% men, average ages 62.33 years \pm 12.48 (range 25-79). 83% of surgeries programmed and 17% urgencies. 64% were myocardial revascularization surgeries, outstanding 35% were valve surgeries or combined one. 19% of patients were smokers, 46% former smoker and 35% never smoked. Diabetes prevalence was 26.3% (type1=10.1%; type 2=16.2%). Periodontal clinical exams determined measures of SH= 35,11 \pm 3,77% (IC95%; 32.3-33.8), PD= 4,6 \pm 1,68 mm (IC95%; 4.26-4.93), CIL= 3,15 \pm 2,95 mm (IC95%;2.56-3.73). Index CPOD total 17, 88 \pm 8, 49 (IC95% 16.19-19.54), where C = 1, 10 \pm 2, 18, P = 15, 12 \pm 9, 74, O = 1, 66 \pm 2, 53. Gingival index = 2, 23 \pm 0, 75, plaque index = 2, 29 \pm 0, 86. Patients submitted to valve surgery presented inferior degree of periodontal disease [CIL= 1,74 \pm 1,2mm (IC95%;0.94-2.5) vs. 3,84 \pm 3,05 mm (IC95% 3.08-4.59), p = 0,017]. **Conclusion:** Patients submitted to cardiovascular surgery presented parameters of high periodontal risk. Periodontal disease was more severe in patients submitted to myocardial revascularization surgery.

Key words: Periodontal disease – Cardiovascular Surgery - Ischemic Cardiopathy

68

HYPERCHOLESTEROLEMIA RELATED TO EXPERIMENTAL PERIODONTITIS, IN RATS. Antona ME, Alsina E, Mancuso AI, Friedman SM, Costa OR, Macri EV. Departments of Biochemistry & Periodontology. School of Dentistry. Buenos Aires University, Argentina. maug.antona@gmail.com

Periodontal disease (PD) is a chronic inflammation resulting in alveolar bone resorption and loss of teeth supporting tissues. In rats, hypercholesterolemia (HC) causes decrease of bone volume that may accelerate tooth decay. **Objective:** to evaluate the effect of HC on the alveolar bone mass in experimental periodontitis (EP). **Methods:** Female Wistar adult rats were assigned either control(C) or HC(atherogenic diet) group. EP was induced by an unilateral ligature(L) around the left first molar(C+L;HC+L); the contralaterals, used as controls (C-L;HC-L). At wk=7 rats were killed, blood was drawn for total serum cholesterol (t-chol). Hemi-mandibles removed and stained (methylene blue,1%wt/vol). Digital photographs (vestibular and lingual surfaces) and radiographs (RVG, Kodak5100) were obtained for quantification alveolar bone loss(ABL). ABL was determined by a) distance method, average of 6 linear measurements (mm,3 of each surfaces) from the cemento-enamel junction (CEJ) to alveolar bone crest (ABC); b) area method (mm²), exposed molar root surfaces by CEJ and ABC. X-rays were used for periodontal bone support (PBS) measurements the most coronal part of the distal cusp, the bone crest top and the distal root apex(%). Statistical analysis:ANOVA-SNK (p<0,05). **Results:** a) t-chol:68 \pm 12mg/dL(C) vs.157 \pm 24(HC)-p<0,001; b) ABL>in C+L and HC+L, HC+L produced a synergy, C-L and HC-L were similar [distance (mm):1,4 \pm 0,1(C+L)<1,6 \pm 0,1(HC+L), vestibular area (mm²):2,9 \pm 0,4 (C+L)< 3,8 \pm 0,5(HC+L)-p<0,001; c) PBS(%):48,3 \pm 5,6(C-L) > 38,7 \pm 3,5(HC-L)=36,4 \pm 5,5(C+L) >28,7 \pm 3,6(HC+L)-p<0,001. **Conclusion:** In adult rats, HC causes loss of interradicular bone mass (according to PBS) being comparable to that caused by a ligature. HC may act as an aggravating factor in the severity of PD.

Key words: periodontitis-alveolar bone resorption-hipercholesterolemia





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

69

ENDOTHELIAL FUNCTION AND PERIODONTAL DISEASE, FEFP STUDY (FEFP STUDY)

Rubio MC12, Lewin P1, De la Cruz G3, Sarudiansky A3, Nieto M3, Costa O3, Nicolosi L1, 2. Dept of Oral and Clinical Pathology, School of Dentistry. UBA¹. Division of Cardiology Hospital Español of Buenos Aires². Dept of Periodontics. School of Dentistry, UBA³. mcrubio@live.com.ar

There is a relationship among dysfunction of vascular endothelium (EFV), hardening of arteries disease and inflammation. After 24 hours of intensive treatment (ITP) of periodontics disease (PD) there appears inflammatory reaction with deterioration of EFV. The inhibiting agents of the enzyme converting the angiotensin (IECA) improve the EFV. **Objective:** To determine if deterioration of EFV after intensive treatment of moderate to severe PD is lower in patients receiving IECA. **Methods:** Prospective study of cases and controls in patients with moderate to severe PD, with or without IECA treatment, who received an ITP. With their informed previous consent, data of atherogenic and ischemic cardiopathies (IC) were gathered. EFV was determined, quantifying dilatation of humeral artery after the ischemia under basal Echocardiography/Doppler. After 24 hours, the ITP was taken, after 24 hours and after 15 days, the EFV was evaluated. Treatment consisted of curettage and smoothing in one session with infiltrative anaesthesia, using curettes and ultrasound. Statistical analysis: data were analyzed by the statistical package SPSS 16, t-test of Students, Manova and analysis of linear regression were included. Confidence intervals (CI) at 95% and $\alpha=0.05$ were set. **Results:** 52 patients, aged 58 ± 10 years, 42.3% women, divided in two groups with IECA 27 (51.9%) and without IECA 25 (48.14%). They showed IC 27%, high blood pressure 54.54%, diabetes 7.2%, dyslipidaemia 30%, obesity 22%, and nicotine poisoning 10%. The EFV worsened considerably after 24 hours of treatment in those who did not receive IECA ($p<0.001$). There were not differences in the basal EFV and in the 15 days. The IECA constituted a significant factor in the differences found (26.7%) (IC95%: 9.1-49.2). The analysis of population variables did not modify influence of the IECA. **Conclusion:** Worsening of the EFV post treatment of periodontal disease is significantly lower in patients who receive IECA. Endothelial function improved after 15 days of treatment, recovering basal values. There are elements that permit to relate IECA to a protecting effect for the back vascular endothelium to the intensive treatment of PD. Awarded by Erasquin Programme 2009-2011. FOUBA.

Key words: periodontics disease, endothelial function.

70

USO DE LA FOSFATASA ALCALINA SALIVAL COMO MARCADOR BIOQUÍMICO DE LA ENFERMEDAD PERIODONTAL

Acuña M, Cuzziol F, Monzón J, Canga E
Facultad de Odontología-U.N.N.E.
odontoacuna@gmail.com

Bone alkaline phosphatase (FAL) is an enzyme directly related osteological metabolism in our body, particularly when there is remodeling (resorption-neoformation) thereof, the (FAL) is secreted by osteoblasts, to compensate for bone destruction produced by the osteoclastic activity. Normal values in blood (serum) are from 20 to 140 IU / L (international units per liter) but also can be found in the saliva with values similar to those of blood (serum). The **aim** of this work was to verify if the increase of the concentration levels of FAL present in saliva, acts as a potential biochemical marker of periodontal disease. **Methods:** We work with 58 patients underwent medical and dental history, a periodontal examination, applying conventional diagnostic techniques of periodontal disease, periodontal Borda depth to determine the periodontitis and Löe and Silness index for gingivitis finally determined the presence of alkaline phosphatase present in saliva, as unconventional diagnosis of periodontal disease. Saliva Collection (unstimulated). Took place in the early hours of the morning, fasting and without pre-rinsing. To collect the sample container used a propylene disposable and sterile screw cap 15 ml capacity. collected in one session for each individual preset schedule, with five-minute interval. The samples were placed in a conservative portable ice for transport and further processing. Descriptive statistics were performed with the data obtained. **Results:** A total of 58 patients examined, 20 correspond to the control group, 38 had periodontal disease: 5 gingivitis and 33 manifesting Periodontitis. In patients with gingivitis there was a significant increase in FAL. Of the 33 patients with periodontitis only 14 had a high concentration of FAL in saliva, which was corresponded with chronic and aggressive periodontitis, manifesting with bone loss radiographically and clinically with periodontal pockets greater than 6mm. In the remaining patients showed no bone involvement and their bags did not exceed 5mm. We **conclude** that the use of saliva as likely FAL biochemical marker of periodontal disease, will provide an alternative in the clinical diagnosis for the determination of the activity of this disease.

Key words: saliva, periodontitis, diagnostic





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

71

MELATONIN REVERSES THE INHIBITORY EFFECT OF MENADIONE ON INTESTINAL CALCIUM ABSORPTION

Carpentieri AR1,2, Areco V.A1, Marchionatti A.M1, Perez A1, Centeno V y Tolosa de Talamoni NG1. 1Cátedras de Bioquímica y Biología Molecular, Facultad de Ciencias Médicas, 2Cátedra de Química y Física Biológicas "B", Facultad de Odontología, UNC. arcarpentieri@hotmail.com

Introduction. In a previous work, we have shown that melatonin (MEL) reverses the inhibitory effect of menadione (MEN) on chick intestinal calcium absorption. **Objective.** The aim of this work was to elucidate the molecular mechanisms underlying this response. **Methods.** Chicks were divided into 4 groups: 1) controls, 2) MEN treated (2.5 μmol / Kg of b.w.), 3) MEL treated (10 mg /Kg of b.w.) and 4) treated with MEL after MEN injection. Gene and protein expressions of molecules involved in the transcellular Ca^{2+} movement were studied by RT-PCR and Western blots, respectively. Oxidative stress and apoptosis were evaluated by different techniques. Results were assessed using one-way ANOVA followed by Bonferroni multiple comparison tests. **Results.** The data show that MEN diminishes gene and protein expression of the Ca^{2+} pump, which was completely reversed by MEL. Other genes involved in the transcellular cation movement were not altered by the treatments. MEN caused oxidative stress as judged by decrease in the GSH content, alteration in the mitochondrial membrane potential and increase in the activity of superoxide dismutase and catalase. All these effects were reversed by MEL. MEN provoked mitochondrial apoptosis as shown by increases in DNA fragmentation, cytochrome c expression and caspase-3 activity. MEL also counteracted these effects. MEL by itself did not alter any studied variable except the gene and protein expressions of the Ca^{2+} pump, which were stimulated by the hormone. **Conclusion.** MEL reverses the inhibitory effect of MEN on intestinal Ca^{2+} absorption counteracting the oxidative stress and apoptosis and enhancing the gene and protein expression of the Ca^{2+} pump, the main molecule involved in the transcellular Ca^{2+} absorption.

Key words: Melatonin, Calcium absorption, Menadione, Oxidative stress, Apoptosis

72

ASSESSMENT OF SMEAR LAYER REMOVAL BY SEM USING 5% MALEIC ACID AND 17% EDTAC AS IRRIGANTS.

Labarta A, Buldo M, Lenarduzzi A, Fernandez Solari J, Gualtieri A, Ritacco E, Elverdin JC, Rodriguez P, Sierra L. Catedra de Endodoncia FOUBA. maurobuldo@yahoo.com.ar

Objective: Evaluate using scanning electron microscope (SEM), the ability of smear layer removal during rotary or manual instrumentation, using sodium hypochlorite (NaOCl) combined with maleic acid or EDTAC as irrigants. **Methods:** 48 extracted human premolars were used, which were randomly divided into 3 groups (n = 16). In the 3 groups, half of the sample was instrumented with Universal Protaper rotary system and half with steel K files, manually. The control group was irrigated after the use of each instrument with 5 ml of distilled water for 1 minute. The experimental group 1 was irrigated with 5 ml of 5.25% NaOCl for 1 min and then with 5 ml of 17% EDTAC for 1 additional minute. Experimental group 2 was irrigated with 5 ml of 5.25% NaOCl for 1 min and then with 5 ml 5% maleic acid for 1 minute. Longitudinal cuts were made and serial micrographs were taken with SEM (1500X). A panoramic horizontal view of the duct was obtained at 2, 6 and 10 mm of working length. The images were scored according to the criteria used by Rome. Scoring medians were compared between irrigants, instrumentation systems and duct thirds through nonparametric statistical tests of Mann-Whitney test and Kruskal Wallis post-test. **Results:** All samples of the control group had the walls covered with smear layer in the 3 thirds. The NaOCl-maleic acid combination showed a capability of smear layer removal significantly more effective than the EDTAC-NaOCl combination, particularly observed in the apical third of the canal, regardless of the surgical preparation technique used (P<0.05). In the coronary and middle thirds, there were no significant differences in the effectiveness of both irrigants. **Conclusion:** The 5% maleic acid is a good replacement of 17% EDTAC for the removal of smear layer.

Key words: smear layer, maleic acid, EDTAC, SEM





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

73

ANTIBACTERIAL EFFECT OF SLOWLY RESORBABLE "MAISTO" PASTE, CEMENTO DE GROSSMAN CEMENT, SEALER 26 AND REAL SEAL.

Buldo M; Lenarduzzi A; Corominola P; Martínez P; Fernández Solari J; Elverdin JC; Rodríguez P.
Catedra de Endodoncia FOUBA. maurobuldo@yahoo.com.ar

Endodontic treatment failures may be due to bacterial growth in inaccessible places of root canals. This reveals the need for a root canal sealant with antiseptic activity which can act against the bacteria that persist after surgical preparation. **Objective:** Evaluate *in vitro* the antibacterial effect of slowly resorbable "Maisto" Paste, Grossman cement, Sealer 26 and Real Seal to the following organisms: *Enterococcus faecalis*, *Staphylococcus aureus*, *Streptococcus mutans*, *Candida albicans* and *Bacillus subtilis*. **Methods:** Fifty blood agar plates were inoculated with the microorganisms mentioned above. The plates were incubated at 37 °C for 24 hs and then we assessed the antiseptic properties of the different sealants, based on inhibitory halo on bacterial growth. We used the ANOVA and Newman-Keuls for statistical analysis. **Results:** Maisto paste showed significant antiseptic power on the growth of all strains studied. Grossman Cement showed a similar antiseptic power compared to Maisto paste on *C. albicans* and *S. mutans*, but its effect was significantly lower on *E. faecalis* ($P < 0.01$), *S. aureus* ($P < 0.001$) and *B. subtilis* ($p < 0.001$). In turn, the Sealer 26 showed no antiseptic power on *E. faecalis* and *C. albicans*, and its antiseptic power on *B. subtilis* and *S. mutans* was significantly lower than that of Grossman cement and Maisto paste ($P < 0.001$), whereas on *S. aureus*, showed an effect similar to Grossman cement. Real Seal showed no antiseptic power on the growth of any of the strains studied. **Conclusion:** Maisto paste sealer proved to be a great antiseptic due to its inhibitory effect on the bacterial growth over all strains studied. Grossman Cement was the second sealer in antiseptic efficacy of this study. The Sealer 26 showed low efficacy as antiseptic, due its lack of effect on certain strains. Finally, Real Seal showed no inhibitory effect on any of the strains studied.

Key words: antiseptic, Maisto paste, Grossman cement, Sealer 26, Real Seal.

74

ORAL DISEASES DISTRIBUTION IN TWO ESTOMATOLOGIC SERVICES. FD NUC.

Zapata M, Blanc F, Caciva R, Belardinelli P, Carrica V, López de Blanc S.
Estomatology A and B, Oral Pathology Department Faculty of Dentistry N.U.C.
marcelozapata500@hotmail.com

Epidemiological studies allow organizing a service to find out the needs of a population. **Objective:** To study the prevalence of diseases in the service of Stomatology (chairs A and B) of the Dentistry Faculty at the UNC. **Material and Method:** We analyzed 1373 clinical records retrospectively: 544 patients attending at "chair A" (A) and 829 at the "chair B" (B) during the period February 2009 to July 2012. The kind of request, spontaneous or derivative, in the last case if they came from a public or private organism, the place where the patients came from, sex, age and pathologies of the patients. The pathologies were diagnosed according to OMS and Grinspan et al. criteria. They were classified in precancerous lesions, infectious, immunological, tumors and other lesions. We applied the χ^2 test for the statistical analysis. **Results:** Most of the patients were derivatives, 63% and 78% in A and B respectively; the highest percentage came from Cordoba city (A: 68% B: 75%). The most prevalent sex was female (A: 59%, B: 64%), with an age average of 48 years and 1-91 range. The most common diseases were Tumors (A: 34% B: 32%), followed by precancerous lesions (A: 30% B: 23%). The most frequent precancerous lesion at both services was lichen planus (A 44% B 57%), followed by leukoplakia (15%) in service A and by chronic traumatic ulceration (25%) in service B. The most frequent infectious diseases were fungal infections (A: 54%, B: 55%) and the predominant tumor lesions were the hyperplastic simple tumors (A: 58%, B: 68%) corresponding only 15% and 13% to malignant tumors in A and B respectively. Precancerous lesions were statistically more prevalent in service A ($p < 0.0001$), while "other lesions", particularly the estomatodinia, were predominant in B ($p < 0.0001$). **Conclusion:** Both services had similar characteristic, It is possible to work together in the design of strategies and methodologies to improve the quality of patient care and to systematize data collection.

Key words: pathology, frequency, derivation.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

75

WHITE SPOT LESION IN VITRO STANDARDIZED BY SCANNING ELECTRON Microscopy

Tolcachir B, Gallará RV.

Cátedras de Integral Niños y Adolescentes, Química Biológica "A", Facultad de Odontología. U.N.C.
btolcachir@hotmail.com

The clinical diagnosis of caries disease is performed when viewing the white spot (incipient caries lesion). The current paradigm which directs the treatment of dental caries imposes the search and the use of different remineralizing agents as a way to repair the enamel. In this sense an experimental *in vitro* model of white spot lesion is useful. **The aim** of this work is to standardize the appropriate time to generate *in vitro* white spot lesion in sound enamel using the scanning electron microscope. **Methods:** We used eight third molars, extracted by professional recommendation, sectioned into 2 halves (vestibular and palatal or lingual, n = 16). Each half was covered with acid-resistant paint, exposing 2 x 6 mm of enamel. Demineralizing solution was used: 0.1 M lactic acid, 3 mM calcium chloride, 1.8 mM potassium dihydrogen phosphate, dissolved in a solution of 1% carboxymethylcellulose (pH 5). The samples were divided into four groups and were immersed in demineralizing solution at 37 ° C for 24, 48, 72 and 96 hours. The white spot lesion was observed clinically, then the samples were metallized with gold to observe the morphological appearance and structural characteristics using a scanning electron microscope (SEM) (SIGMA) at various magnifications (40x, 100x, 1000x and 8000x) **Results:** In Groups 24 and 48 h. white spot lesions was undetectable in some of the samples studied, while in the group of 72 h. all samples showed lesions seen clinically and at SEM showed a pattern of similar demineralization. Furthermore, the group for 96 hours is clinically characterized by loss of substance in some areas of the lesion. **Conclusion:** The pattern of demineralization observed at 72 h allowed us to standardize the conditions for an *in vitro* model of white spot. This model would be useful to study the effect of different dental enamel remineralizing agents.

Key words: white spot lesion; *in vitro* demineralization; scanning electron microscopy

76

LONG TERM ASSESSMENT OF THE EFFECT PRODUCED ON S. MUTANS BY APPLICATIONS OF FLUORIDE AND CHLORHEXIDINE.

Zimmermann E, Cachia A, Diaz A, Maino A, § Spoleti MJ, Pisterna G, Spoleti P.

Social III, Faculty of Dentistry, UNR; § Bacteriology, HNZN. elzimmer@fibertel.com.ar

Dental caries has multifactorial etiology, *Streptococcus mutans* (Sm) have been implicated as causative agents of caries, so that antimicrobial agents are a reasonable preventive approach; various substances have been proposed to achieve a reduction of Sm in the human dentition, including fluoride and chlorhexidine. In previous studies we found a beneficial effect, in the short term, for both agents in children participating in a Community Prevention Program. **Aim:** To assess the effect of applications of fluoride or chlorhexidine after one year of their implementation. **Methods:** Ninety children participants of a community prevention program were selected. A sample of total stimulated saliva was taken (initial: I). Saliva was aspirated with sterile 5 ml pipette, and placed in a sterile test tube with bacteriological lid, kept on ice at 4 ° C for transport to the processing laboratory. Bacterial cultures were performed, Sm identified by biochemical tests and colony forming units (cfu) quantified. The population was randomly divided into two groups (n = 45) they received different treatments: group A application of fluoride gel, group B application of chlorhexidine gel; in both cases once per week for one month. One year later, the salivary sampling was repeated (control: Q) and the amount of cfu of Sm was compared with the first sample (I). **Results:** 13 children of group A and 6 of group B were not assisting to the educational institution or were not present the day of the control sampling. The cfu difference between the I and Q sample was significant (Student's test) in the group B (range I: 2 x 10³ y 6 x 10⁵, range Q: 1,2 x 10² y 2 x 10⁵) (p= 0.02); but not in group A (range I: 3 x 10³ y 3 x 10⁵, range Q: 1,5 x 10² y 3 x 10⁵) (p = 0.91). **Conclusion:** The effect of applications of fluoride gel or chlorhexidine gel by four weeks was proved to be useful to reduce Sm in short time, however, according to our findings, the effect obtained when using chlorhexidine gel appears to be more sustained over time.

Key words: S. mutans- fluoride - chlorhexidine





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

77

ORAL HEALTH STATUS AND ORAL HEALTH-RELATED QUALITY OF LIFE IN PREGNANT WOMEN.

Cornejo C, Rossi G, Rama A, Gomez Gutierrez N, Alvaredo G, Squassi A, Klemonsksis G.
Cátedra Odontología Preventiva y Comunitaria, FOUBA.
celinacornejo@hotmail.com

Aim. To explore whether there is a relationship between oral health status and oral health-related quality of life of pregnant women of socially deprived populations of CABA. **Methods.** 45 pregnant women (age 18-39 $x=25,19\pm 6,56$) on their 1^o/2^o trimester were sampled from the population of women attending a health center located in the south of CABA for their pregnancy control. The impact of oral disease was assessed using the Spanish validated version (López, 2006) of OHIP-49. (Slade y Spencer, 1994), which includes 49 items grouped in 7 domains. Each item admits an answer among 5 categories. A value ranging from 1 to 5 was assigned to each answer. To assess oral health status, 4 calibrated researchers performed a clinical examination and registered: Gingival Index (Löe y Silness, 1963); depth on probing, clinical attachment level, bleeding on probing and DMFT discriminating its components. Variables were analyzed in the population as a whole and compared in groups regarding previous dental attention (presence of fillings). Statistical analysis included: Chi Square test in order to establish association between variables and U of Mann-Whitney test to compare groups. **Results.** 85,72% of the patients showed clinical signs of gingivitis, in no patients was periodontitis diagnosed. Mean DMFT was $13,02\pm 5,73$ (D/DMFT= $6,40\pm 4,48$; M/DMFT= $4,09\pm 4,31$; F/DMFT= $2,53\pm 3,52$); 73,3% of the patients had at least one missing tooth; 91,1% presented active caries lesions; 55,6% had at least one filling. Most frequent impacts were reported in the domains: psychological discomfort (59,9%=frequent concern about dental problems) and functional limitation (51,1%= frequent perception that "a tooth did not look good"). Oral health status and oral health-related quality of life showed no significant association. Domains concerning functional limitation ($p<0,04$) physical pain ($p<0,01$), and physical disability ($p<0,03$) showed higher levels of impact in the group of patients with previous dental attention (presence of fillings). **Conclusion.** Oral health-related quality of life did not reflect oral health status, nevertheless, it may be an intervenient variable regarding dental service requests. SUBSIDIO P. ERASQUIN FOUBA 2011-13

Key words: quality of life, pregnant women, oral health status

78

PARTICIPATION OF TEACHERS AND STUDENTS IN THE COMPUTER ROOM OF THE FOUNLP

Albarracín S, Tomas L, Medina M M, Coscarelli N, Rueda L, Papel G, Irigoyen S, Tissone S.
FOUNLP
silvia-a-albarracin@hotmail.com

Objective: As objective we set ourselves to know what is the use that is given to the computer room of the FOUNLP by teachers and students. **Methods:** The FOUNLP now has 33 computers installed with Ubuntu operating system, Internet access, with wide availability of schedules for teachers and students, assisted by interns on a rotating schedule. We conducted a survey to every person who entered the room in May 2010. Completed anonymously by 10 teachers (teaching classes) and 119 students FOUNLP. Descriptive statistics were applied to analyze the data and homogeneity test, one of the frequency analysis using Chi-square distribution. **Results:** The results indicated that the peak period of use is from 12:00 to 16:00, with the entire room ($n = 33$). One can observe a significant difference ($P < 0.001$) of the reasons for use at the times available. The increased use of the cabinet by teachers for teaching classes, was recorded between 8:00 and 14:00 pm. Average attendance in those classes was 41 ± 16 ($P = 0.05$). Resulting in 20% of classes attended by more than two students per computer. The surveys showed that the morning hours (8:00 am to 12:00 pm) is the most used by teachers in teaching classes. Between 12:00 and 16:00, the cabinet is used by students, mainly for personal use of Internet. There time availability during the afternoon / evening, 16:00 to 23 pm. **Conclusion:** From the results, we note that it is necessary to broaden the dissemination of the resources available in the computer room and the advantages of using UBUNTU software in FOUNLP. Given the times in all areas of our social, economic, cultural and technological course, education is experiencing a period in which to bet on the direction of innovation in adapting to changes and respond to the needs of the environment, strengthening, to enhance opportunities for teachers passes inevitably cross the adoption and implementation of ICT as a corporate strategy.

Key words: Teacher-Student-Computer-FOUNLP





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

79

ACCURACY IN THE DETERMINATION OF THE WORKING LENGTH OF TWO APICAL LOCATOR

García Leonardi MC, Cuezco V, Gallegos P, Leonardi L, de la Casa ML, Atlas D
Cath. of Endodontics. Faculty of Odontology. University of Tucumán. Argentine.
cotygleonardi@hotmail.com

Objective: The purpose of this study was to compare in vitro the accuracy of two electronic apex locators and the influence of two different operators in determining the working length. **Methods:** Thirty top and low human first molars with completely formed apex root were selected for the study. The crown of the tooth was removed at the cemento enamel junction to obtain an easy access to the root canals. Each root canal were measured using a size 15 K-file (Dentsply Maillefer) introduced into the palatal or distal root canals until the tip was visualized with the help of a magnifying glass (x 20) at the apical foramen The rubber stop was move to the reference point and the length was recorded. This measure was considered to be the real length of the element (LR). Then using an experimental model: Altenburger M. J. (2008), the measurements of the root canals were realized by the apex locator Propex II (Dentsply-Maillefer) y Root ZX II (J. Morita). The same rule was used for the manual and electronic method. Results: the measurements were analyzed in a statistical package by calculating the percentage proportions. PROPEX II had an efficiency of 75%, while the Root ZX II 83%. **Conclusion:** The accuracy of Root ZX II apical locator was greater than the Propex II in the determination of the working length.

Key words: Apex locator, Working lenght

80

ROLE OF SERUM AUTOANTIBODIES AGAINST CARDIAC ADRENOCEPTORS PRESENT IN PERIODONTITIS PATIENTS

Reina S, Borda E
Pharmacology Unit - School of Dentistry - University of Buenos Aires and CONICET. slreina@yahoo.com

Objective: To examine the role of beta-1 adrenergic receptors (beta-1-AR) of rat myocardium in the presence of antibodies with beta-1-AR-activity present in the serum of patients with chronic periodontitis (CP) in the apoptotic phenomenon. **Methodology:** we used the transfer terminal nucleotide (TUNEL) and the activity of caspase-3 like enzyme responsible for the apoptosis cascade. We used the rat atria myocardial incubated in the presence of immunoglobulin G (IgG) from serum of patients with CP and xamoterol, both alone and in the presence of enzyme and receptor antagonists. **Results:** both xamoterol and IgG CP increased the atrial apoptosis concentration-dependent manner, showing a maximal effect at 1×10^{-9} M: % apoptotic nuclei (mean \pm SEM) n = 8: xamoterol: $70\% \pm 2.8$; IgGCP: $78\% \pm 3.0$; IgGn (healthy individuals): 22 ± 2.1 , $P < 0.0001$ vs IgGn. This stimulatory effect observed with both xamoterol and IgG CP were inhibited by the presence of atenolol ($38\% \pm 2$) and by the synthetic peptide beta-1 ($45\% \pm 3$). Moreover, when studying the activity of caspase-3 with the stimulation of IgG CP or xamoterol, enzyme activity was increased significantly compared to the IgGn: optical density (OD) / mg protein, n = 7: IgGCP: 3.45 ± 0.11 ; xamoterol: 1.40 ± 0.11 ; IgGn: 0.52 ± 0.14 , $P < 0.0001$ vs IgGn. The modulator mechanism whereby the adrenergic agonist and the IgG CP caused the phenomenon showed the participation of nitric oxide synthase, calcium-calmodulin complex, and the second messenger cAMP. **Conclusion:** receptor beta-1-AR of atrial myocardium when was activated by an agonist beta-1-AR as well as specific serum IgG from patients with CP stimulate apoptotic process not only through typical apoptotic signal, but also release second messengers. These facts point to the involvement of the serum IgG CP as a probable factor in the development of diseases with myocardial involvement due to inflammatory chronic course of the PC.

Key words: periodontitis, apoptosis, adrenoceptors, infarction





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

81

CANDIDA PREVALENCE IN EDENTULOUS PATIENTS ATTENDING THE PROSTHODONTIC II B SERVICE, FOUNC. Liandro M, Montanez D, Belardinelli P, Pajón A, Castillo G, Barembaum S, Azcurra A, Lopez de Blanc S. Cátedra de Estomatología B, Facultad de Odontología, Universidad Nacional de Córdoba. fernandaliandro@hotmail.com

Objective: to study the prevalence of Candida spp in patients attending the Prosthodontic II B Service, Faculty of Dentistry UNC. **Methods:** Total edentulous patients who will make acrylic complete dentures were included. Exclusion criteria: pregnant women, diabetics, immunosuppressed, patients medicated with antifungals, antibiotics or steroids. A complete ad-hoc clinical record was performed. A sample for mycological study was collected (direct examination and cultivation). Gram stain was used for direct examination, and Sabouraud dextrose agar 24-48hrs at 37 ° C for isolation. The clinical diagnosis of candidiasis was based on the score (ILO) proposed by López et al. 2002. We applied the Wilcoxon test for independent samples and χ^2 test. **Results:** 41 patients were studied, 73% female, the age average was 58 and the range 32 to 85 years. The 80% of the patients had positive mycological tests (with or without clinical lesion). The 34% of patients had clinical lesions of candidiasis and positive mycological test. The ILO average was 3.4 and 93% of the patients had lesions in the tongue and palate; the most frequent clinical aspects were atrophy and erythema. The 70% of the patients without lesion had at least one positive mycological test; in 87% of tongue and 25% of palate samples, hyphae were detected. Although there was no relationship between the presence of Candida and dentures users, 93% of the patients with candidiasis lesions and 77% without lesions were full upper denture users. The 59% of patients were smokers and 5% alcohol consumers in the sample studied. Wilcoxon test indicated that smokers had higher ILO ($p < 0.02$). **Conclusion:** Due to the high frequency of Candida in the samples, we remark the importance of studying the population prevalence, and it should be necessary to project a study of the behaviour of this commensally organism after installing new dentures.

Key words: candida, prevalence

82

PREVALENCE OF CLINICAL ATTACHMENT LOSS IN ADOLESCENTS FROM SANTIAGO DE CHILE. Carvajal P1, Mendoza C2, Morales A3, Gamonal J1. 1Department of Conservative Dentistry, Faculty of Dentistry, University of Chile. 2 Oral Health Department, Ministry of Health. 3 Student Faculty of Dentistry, University of Chile. paolacp26@yahoo.es

Periodontal attachment loss (PAL) is highly prevalent in the adult Chilean population (>93.4%). There is no precedent of complete registers in adolescents. We performed a cross-sectional study framed in the Project "Prevalence of PAL in Adolescents of the Southern Cone", to determine the prevalence of PAL in adolescents aged 15 to 19 who attend schools in Santiago and its association with predictor variables. **Methodology:** A random selection of 17 schools (municipal, subsidized and private) was made to invite adolescents between 15 and 19 years to participate for a total of 332. Their parents gave their consent and assent for examination. The measurements were performed by two calibrated examiners, by North Carolina probe, at 6 sites per tooth, registering gingival position (GP), probing depth (PD), bleeding on probing (BOP), plaque index (PI) and a self-administered survey. Data were analyzed using frequencies, deviations and confidence intervals. We performed chi-square and multivariable logistic regression model considering statistical significance at 95% confidence level ($p < 0.05$), using statistical program Stata11 ®. **Results:** 165 (49.7%) were women and 167 (50.3%) were men with a mean age of 16.9 years. 23.4%, 50.6% and 25.9% were municipal, subsidized and private school respectively. 25.3% reported smoking. The prevalence was 31.9% and 8.7% for PAL ≥ 3 mm and ≥ 4 mm respectively. The 15.9% have BOP $> 20\%$ and 29.2% PI $\geq 10\%$. The percentage of adolescents with PAL ≥ 3 mm by school was 51.2% (39-62), 27.3% (20.5 to 34.1) and 9.5% (14.1 to 32.3) for municipal, subsidized and private respectively, $p < 0.005$. The variables of significance ($p < 0.01$) for PAL ≥ 3 mm were smoking (OR: 2.28) and average PD (OR: 35.9) adjusted by age, gender, school, BOP, PI and diabetes. **Conclusion:** In adolescents from Santiago PAL ≥ 3 mm is prevalent in at least one site, and there is a social gradient according to the type of school. Smoking and average PD are the main indicators of risk of its presence.

Project Funded by Colgate, FIPP and Fouch.

Key words: Epidemiology, Adolescents, Clinical Attachment Loss





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

83

PRESCRIPTION DRUG FOR ORAL DISEASES IN PRIMARY HEALTH CARE

Karaben, Viviana Elizabeth, Rea Ana Eloisa, Morales Sergio Daniel.
Facultad de Odontología- Universidad Nacional del Nordeste.
vivkaraben@hotmail.com

Objective: To analyze the drugs prescribed by dentists for dental pathologies. **Methods:** An observational and descriptive, prescription - indication which describes the indications for which they used a particular drug or class of drugs. It observed the recipes containing prescriptions made by dentists of 5 Primary Care Centers (CAPS) in the city of Corrientes, for a term of 12 months. The rationality of prescriptions was evaluated according to diagnosis, dose and duration of treatment, then contrasted with national and international treatment guidelines. To assess the appropriateness of prescribing was considered only diagnosis. **Results:** Of a total of 8500 prescriptions observed for 12 months, 599 were prescriptions made by dentists for dental pathologies. The average age of patients was 29 years, females accounted for 326 and 273 male. The recipe contained one, two or three drugs depending on diagnosis, in 192 was observed only one drugs, in 397 recipes two drugs and 10 recipes three drugs. The diagnoses of oral diseases were the most common dental abscess (367), pulpitis (92), toothache (83), dental abscess (24) and periodontitis (9). As prescribed drugs: amoxicillin (36%), ibuprofen (31%), paracetamol (21%), cephalexin (4%), dexamethasone (4%). Qualitatively analyzed, according to the therapeutic potential intrinsic value, all prescriptions were high value. **Conclusion:** The prescriptions of medicines by dentists in Primary Health proved to be relevant and contained high-value medicines according to prescription quality criteria. The doses used and the duration of treatment were considered adequate with therapeutic guidelines of reference.

Key words: drugs-analgesic-antibiotics

84

BISPHOSPHONATE ASSOCIATED OSTEONECROSIS OF THE JAWS. A RETROSPECTIVE AND DESCRIPTIVE STUDY OF 25 CASES.

Bachmeier E, Morelato R, Panico R, Lopez de Blanc SA
Catedras de Estomatología A y B. Facultad de Odontología.UNC. evelinbach@hotmail.com

Bisphosphonates are drugs that inhibit osteoclastic activity. The **aim** of this work was to study the clinical features of bisphosphonates- associated osteonecrosis of the jaws in 25 patients at the Service of Stomatology, Faculty of Dentistry (UNC). **Methods:** a retrospective descriptive study was performed. Sex, Age, systemic disease, risk factors and clinical manifestations (as classified by Ruggiero et al) were analyzed. Patients were classified according to the way of administration of the bisphosphonate (oral or intravenous). **Results:** seventeen patients (68%) were female. The mean age was 61 years old for patients that received intravenous bisphosphonates and 71 years old for patients under treatment with oral bisphosphonates. Twelve patients 48% had cancer and received intravenous bisphosphonates, while 48% had osteoporosis and were treated with oral bisphosphonates. Only one patient (4%), with Paget's disease received oral and intravenous bisphosphonates. The most frequent intravenous bisphosphonates administrated were zoledronic acid and pamidronate. Oral bisphosphonates administrated were: alendronate and ibandronate. Most of the patients 84% (n=21) were referred by health professionals and most of them have got pain and loss of sensitivity. Six months was the mean time evolution until the first symptom. Most lesions had exposed bone with or without symptoms corresponding to stage 1 and 2 with 48 and 42% of the cases respectively. The most common site of localization was the mandible (64%) followed by maxilar location. The most common associated risk factor was dental extractions but did not present association with the location or the way of administration. Only cancer patients showed multiple spontaneous upper and lower lesions. **Conclusion:** It is remarkable the percentage of patients taking oral bisphosphonates that develop osteonecrosis of the jaw, the importance of early diagnostic and the good evolution of the lesions.

Key words: bisphosphonates- osteonecrosis





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

85

STUDENT'S EXPERIENCE IN USING ONLINE COMMUNICATION TOOLS

Don J, Zarate AM, Llanes M

Cátedra "A" de Biología Celular. Facultad de Odontología, Universidad Nacional de Córdoba.
mariollanes@gmail.com

Objective: Assess the experience in using of three online communication tools (Moodle, Google Sites and Facebook) in first year university students who have studied the subject "Biología Celular A" during the year 2011 at Facultad de Odontología (UNC) in order to determine which of these is more adapted to educational purposes. **Methods:** A survey to students (n= 223) who have studied the subject Biología Celular A during the year 2011 was realized. In this survey was determined: experience and frequency of use available online media, utility of using more than one tool, advantages over traditional tools; the last two items had to be justified. **Results:** The results showed that Moodle platform was the most frequently used tool (77,03 %); however, the best qualified communication medium in regard to experience in using was Facebook (66, 22%). Besides, 87,37 % considered useful the possibility of having more than only one online communication tool, but only 42.60% justified his response (n= 95). 87.84% saw the advantage of online tools over traditional (transparent), and 41, 25% respondents justified this answer. **Conclusion:** The use of communication and information technologies is becoming more frequent in education. This creates an increasing variety of tools for teachers. Choose the appropriate tool is complex and requires special attention. The results reveal wide acceptance of the use of more than one means of communication, preferably online, by students. Among evaluated tools, Moodle and Facebook in combination would be the most appropriate to implement an online communication system by teachers.

Key words: TICs, first year university students. communication

86

CONCORDANCE BETWEEN CLINICAL AND HISTOPATHOLOGICAL DIAGNOSIS OF ORAL MUCOSA LESIONS OVER A PERIOD OF 5 YEARS.

Meloni Natalia, Criscuolo MI, Robledo G, Ferreyra R, Morelato R, Lopez de Blanc SA

Cátedra de Estomatología B. Facultad de Odontología. UNC. natalia_meloni@hotmail.com

Despite the advances in technology and the increasing complexity of available complementary studies, clinical knowledge is most often the determining factor to reach the diagnosis. **Objective:** To evaluate the concordance between clinical and histopathological diagnosis describing the characteristics of oral mucosa lesions that were sent to confirmation. **Methods:** A retrospective, descriptive study of clinical records of patients treated at Stomatology "B" who had lesions that requiring histopathological confirmation. Data from patients that received biopsy and cytology between July 2007 to July 2012 were analyzed. Those patients who required mycological and bacteriological study were excluded. Age, sex, type of study requested, location of the lesions and clinical diagnosis were studied. The lesions were classified as: benign tumors (BT) which included the simple hyperplastic, blastomatous and malformative; precancerous lesions (PC), malignant neoplasia (MN) and other (O). The concordance between clinical and histopathological diagnosis (C-HP) according to criteria used by other authors was established. Descriptive statistic and the percentage of concordance were obtained. **Results:** of 488 patients requiring histopathological study, 310 (63%) were female; 357 (73%) were biopsies and 131 cytologies. The 75% (269) of the biopsies were compatible C-HP, slight concordance in 13% (47) and none in 6%. BT 63% (225) and MN the 14% (51) were the lesions more often biopsied. In general the 75% of concordance C-HP was obtained: 84% was reached in the BT and 82% in NM. There was no concordance in 20 diagnoses (6%) of the total. A 26% of the biopsies were obtained from bucal mucosa and 14% of the tongue. Cytology was performed in 50% of the cases to discard malignancy and 29% to diagnose herpes. **Conclusion:** There was an acceptable concordance in relationship with data published by other authors. These results allowed evaluating many aspects of dental practice in two complementary services of the FD-NUC.

Key words: biopsies, cytology, concordance, clinical diagnosis, histopathological diagnosis.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

87

INFLUENCE OF CERVICAL PREFLARING ON TACTILE DETECTION OF THE APICAL CONSTRICTION

Orlando A, Leonardi L, Garcia Leonardi MC, Atlas D.
Cath of Endodontics. Faculty of Odontology. University of Tucumán. Argentine.
anabella000@hotmail.com

The **objective** of this study was to evaluate the influence of cervical preflaring on tactile detection of the apical constriction. **Methods.** Monoradicular fifty teeth with a single canal, with curvature less than 25°, and with a permeable apical foramen were selected. They were submerged in sodium hypochlorite at 5.25% for 15 minutes to dissolve the soft tissue remains. After that, a standard access opening, a 2 ml sodium hypochlorite 1% irrigation, an exploration and a determination of apical constriction, through tactile sensation with 15 or 20 K-files were performed. A vestibular and lingual radiograph was taken (group 1). After preflaring with Gates Glidden drills No. 3 and No. 2, the apical constriction was determined again. A new radiograph (group: 2) was taken. In radiographic images of both groups the distance between the tip of the file and the radiographic apex was measured and it was classified according to one of the following categories: a-within 1 mm of the radiographic apex; b-sub extension, over 1 mm of the radiographic apex and c-overextended, less than 1 mm of radiographic apex. Data were analyzed using paired proportions test. **Results.** We found that the proportion of pieces included in category A was significantly different between groups ($p = 0.03$). In group 1, there was 32% compared with 56% in group 2. There were no differences between groups in categories B ($p = 0.09$) and C ($p = 0.30$). The 26% of the pieces in group 1 and 12% in group 2 were included in category B. There was overextension (category C) in 42% of the pieces in group 1 and 32% in group 2. **Conclusion.** The ability to determine the apical constriction through tactile sensation was increased in preflared canals.

Key words: tactile detection, apical constriction, preparing the cervical third.

88

EFFECTIVENESS OF SODIUM HYPOCHLORITE IN ROOT CANALS INFECTED WITH ENTEROCOCCUS FAECALIS

Martín G, Gani O, Parage MG, Visvisián C
Department of Endodontics, School of Dentistry, National University of Cordoba. ggmartin@hotmail.com

In infected root canals is an essential step for a successful endodontic therapy. Sodium hypochlorite (NaOCl) is the most common irrigating solution used during chemomechanical preparation, not only because it dissolves organic matter but also for its antibacterial properties, that are increased when it is used sequentially with chelating agents such as EDTA. The **Purpose** of the present study was to compare in vitro, the antibacterial effectiveness of NaOCl in three different concentrations on E faecalis in root canals. **Method:** 56 freshly extracted, intact human premolars were used for this experiment, distributed into 4 groups of 14 teeth each. After adequate preparation, the teeth were infected with E faecalis (ATCC 29212) and incubated for 45 days at 37 ° C. Following this incubation, the premolars were instrumented with Protaper rotary files (Dentsply/Maillefer) and irrigated with NaOCl. The teeth were divided into four groups: (1) 1% NaOCl; (2) 2.5% NaOCl; (3) 5.25% NaOCl and (4) 1% + 5.25% NaOCl. After instrumentation, groups 1,2 and 3 were irrigated with 17% EDTA; and group 4 was irrigated with EDTA followed by 5.25% NaOCl as final irrigation. Two samples were collected from root canals: the first one before instrumentation and irrigation, and the second one after the final irrigation. The samples, followed by serial dilutions, were plated and incubated at 37° C for 48 hours. The colony forming units (CFUs) were counted. The comparative analysis was done by Mann-Whitney test. **Results:** The most effective irrigant against E faecalis was 5.25% NaOCl, with a statistically significant difference respect to the other groups ($p < 0.05$). However, there was no statistical difference between groups 1 and 4; although in the last group, 5.25% NaOCl was used as final irrigant ($p = 0.279$). **Conclusion:** The use of 5.25% NaOCl during instrumentation followed by EDTA as final irrigation was the most effective concentration to reduce E faecalis in root canals.

Key words: Root canals. Disinfection. Sodium Hypochlorite





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

89

PREDICTION OF SALIVARY TUMOR RECURRENCE THROUGH THE EXPRESSION OF C-ERB-B2 AND P-53. Ruggieri M, Escandriolo Nackauzi J, Bertolotto P, Dionisio de Cabalier M, Actis A. Facultad de Ciencias Médicas, Facultad de Odontología, Facultad de Matemática, Astronomía y Física, CONICET-Instituto de Investigaciones en Ciencias de la Salud escandriolojorge@odo.unc.edu.ar

Objective: To evaluate the recurrence risk of benign and malignant salivary gland tumors through the expression of c-erb-B2 and P-53 biomarkers. **Methods:** 36 persons of both sexes were distributed in four groups: patients bearing benign tumors without recurrence (BTwR; n=14) and with recurrence (BTR; n=7); and patients bearing malignant tumors without recurrence (MTwR; n=7) and with recurrence (MTR; n=8). Tumor samples were obtained by surgical excision and preserved in 10% neutral formalin until histological and immunohistochemical analyses (C-erb-B-2 y p-53 biomarkers). Four categories were established according to the biomarker expression intensity: negative (0), weak (+ / 30%), moderate (++ / 60%) and severe (+++ / 90%). Kruskal Wallis test was applied in order to compare the c-erb-B-2 and p-53 expression between groups ($p < 0.05$) and a logistic regression model to establish associations between biomarker expression and tumor recurrence. **Results:** c-erb-B2 and p-53 markers were expressed in 14% and 81% of tumors without recurrence and 27% and 93% of tumors with recurrence, respectively. The mean values of c-erb-B2 according to the expression intensity (0-3) were 0 (BTwR), $0,43 \pm 0,79$ (BTR), $0,86 \pm 1,21$ (MTwR) and $0,50 \pm 1,07$ (MTR) whereas for p-53 were $1,50 \pm 1,16$ (BTwR), $1,43 \pm 0,79$ (BTR), $1,86 \pm 1,21$ (MTwR) and $1,88 \pm 1,13$ (MTR). No statistically significant differences were observed when comparing p-53 between BTwR/BTR and MTwR/MTR ($p > 0.05$). Due to the poor expression of c-erb-B2, it was not compared between groups. The logistic regression model showed no association between the p-53 expression and tumor recurrence (odd 1.04; $p = 0.89$). **Conclusion:** the results of this study suggest that c-erb-B2 and P-53 biomarkers would not be useful to determine the recurrence risk of benign and malignant salivary gland tumors. Further research on this important topic is required. Grants from Secretaría de Ciencia y Tecnología. Universidad Nacional de Córdoba. Res. N° 069/08 and Ministerio de Ciencia y Tecnología-Provincia de Córdoba Res. N°121/08. Córdoba, Argentina.

Key words: salivary gland, biomarkers, recurrence.

90

BONE REGENERATION: EFFECT OF THE CALCIUM HYDROXIDE ASSOCIATED WITH AN ABSORBABLE COLLAGEN SPONGE

Gait, M.T.; Fontana, S.; Plavnik, L.M.; Crohare, L.; Malberti, A.
Dentistry Faculty (UNC), CREO Foundation. marioplav@yahoo.com

In SAIO 2009, we observed that the calcium hydroxide applied in the tibiae of rats accelerated and stimulated the bone regeneration. Considering the evidence as regards the reactional differences between the long bone and the alveolar bone, we observed that the calcium hydroxide did not produce the same effect in a model of a post-extraction socket of rat (SAIO 2010). However, this model ignored methodological details that influenced the results negatively. Taking these observations into account, we proposed as **objective** study the effect of the calcium hydroxide associated with an absorbable collagen hemostatic sponge (Hemospon, Technew®) in the bone regeneration of post-extraction sockets of rats. **Methods:** 24 male Wistar rats of approximately 100 g of body weight were used. The animals were anesthetized and the extractions of both first lower molars were performed. In every case, pure calcium hydroxide powder and a piece of absorbable collagen sponge were placed in the post-extraction sockets of the left side covering the filling (Experimental group). The ones from the right side were used as controls, only placing the sponge (Control group). The animals were killed at 7, 15, and 30 days after the extractions; and every hemimaxilla was X-rayed. The images obtained in a standardized way were scanned and were analyzed with software called Image Pro Plus 4.2. With this program, the optical density and the grey-scale density were measured. The **results** were analyzed statistically with the non-parametrical method of Mann Whitney and with ANOVA for intergroups. The data obtained indicate that there are no statistically significant differences between the experimental and control groups in the two types of measures performed. On this basis, we **stated** that the calcium hydroxide did not improve the quality of newly-formed maxillary bone in experimental conditions in comparison to the control groups. However, a higher bone density was observed after seven days.

Key words: calcium hydroxide, post-extraction socket, bone regeneration.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

91

CYTOLOGICAL STUDY OF BORDER OF THE TONGUE MUCOSA IN SMOKERS

Nalli Gabriela, Lanfranchi H, Cabrini RL.

Departments of Oral Medicine and Oral Pathology; School of Dentistry; UBA.

gnalliverdu@hotmail.com

Smoking is one of the most important risk factors for oral cancer. The most frequent oral location of squamous cell carcinoma is the tongue, mainly the lateral posterior ventral surface. Oral exfoliative cytology allows studying samples of oral mucosal epithelium which are desquamated, providing initial diagnosis of a number of pathological conditions. **Objective:** To compare nuclear alterations in cells of the borders of the tongue in smoker and non-smoker patients. **Methods:** The study comprised twenty patients seen at the Oral Medicine Department, FOUBA, 10 of whom were smokers aged 30 to 60 years, and 10 were non-smokers aged 23 to 60 years. Patients with a history of smoking more than 10 cigarettes per day over a minimum of 10 years and who were non-drinkers were included in the study. Cytological samples were obtained using a brush, and were stained with Giemsa. Microscopic observation was performed to evaluate the number of cells with nuclear alterations, according to Tolber's criteria; the cells were classified as binucleate, karyorrhexis, with nuclear fragmentation, pyknotic, with chromatin condensation, with micronucleus, karyolytic, and with nuclei exhibiting no alterations as shown by cytology. The obtained results were statistically analyzed using Chi square test with Yates correction, and statistical significance was set at a value of $p < 0.05$. **Results:** The statistical analysis showed significant differences in chromatin condensation, nuclear fragmentation, pyknosis, karyolysis, binucleation, and karyorrhexis ($p < 0.005$). **Conclusion:** These preliminary results suggest that smoking causes cell-nucleus alterations in clinically normal oral mucosa of the border of the tongue, as shown by exfoliative cytology; this finding is relevant to the clinical practice.

Key words: Oral exfoliative cytology, border tongue, oral mucosa, Smokers

92

DENSITOMETRIC QUANTIFICATION STUDY USING IMAGE ANALYSIS ON RADIOGRAPHS OF DENTAL IMPLANTS. Brandizzi D, Bruno ME, Costa O, Cabrini RL. Division of Pathology, Department of Radiobiology, CNEA. LANAIS- MEF (CONICET- CNEA) and Department of Pathology, School of Dentistry, Buenos Aires University. marcosebruno@gmail.com

Dentists use periapical radiography (Rx) to evaluate dental implants. Peri-implant observation is subject to the professional's personal appreciation and provides valuable data on the behavior of the implant with regard to the bone. We presented a method for estimating possible osseointegration of dental implants by using densitometric evaluation of radiographs. **Aims:** This paper presents our first results from the application of this method for densitometric quantification by using image analysis on Rx of dental implants. **Methods:** Ten clinical cases of dental implants in different clinical situations were selected. A Rx evaluation was performed to define the implants as stable (SI), doubtful (DI) or failed (FI). The Rx were digitalized under similar conditions of light intensity (1920 x 1080 pixels). The image analysis software Image Pro Plus 4.5.0.29 was used. The densitometric control value was bone marrow from a zone near the maxillary bone. Measurements for each clinical case were taken in the periphery of the implants, on areas measuring $200,000\mu^2$ at the bone-implant interface, distributed over the peri-implant surface every 1mm. The parameters measured were: Optical Density per micron (OD/μ) and inverse of OD/μ ($InvOD / \mu$). The latter was used to prepare a graphs. The area corresponding to " $InvOD / \mu$ " with values higher than the control bone was interpreted as osseointegrated bone. **Results:** Ten dental implants were studied, which were classified as SI (n=5), DI (n=2) and FI (n=3). The curves in the implant - graphs were related to Rx observation. The percentage value of the points interpreted as osseointegrated was 0.77 ± 0.23 (n=5) for SI and 0.23 ± 0.21 (n=5) for DI and FI ($p=0.01$). **Conclusion:** We have presented preliminary densitometric quantification results for radiographs of 10 dental implants. The implant - graphs that resulted from the analysis allowed a more detailed interpretation of the bone-implant interface. The cases studied had different densitometric values, which were related to the radiographic situation observed. Further studies are needed on a larger number of cases, and their results need to be correlated with the clinical evolution of the implants.

Key words: quantification, image analysis, radiographs and dental implants





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

93

MORPHOLOGICAL STUDY OF EXFOLIATIVE CYTOLOGY IN ORAL MUCOSA OF CHILDREN WITH SEXUAL ABUSE IN THE PROVINCE OF CÓRDOBA.

Sollazzo M., Navarro Guitart M., Ruiz A., Bürcher E., Tomasi R., Ferreyra de Prato RS.
Facultad de Odontología- Universidad Nacional de Córdoba. rsferreyradeprato@gmail.com

Oral cytologic features in the pediatric population have not been studied in patients with suspected child sexual abuse (CSA), often associated with sexually transmitted diseases (STDs), whose characteristics have been presented by our team in SAIO 2010. **Objective:** To analyze cytological characteristics of the oral mucosa of children with CSA to compare samples of a healthy population to determine the volume in intermediate cells in cytological **Methodology:** Exfoliative Cytology superior vestibular sulcus was performed in 119 patients 2 to 14 years of age. Divided into groups: control and B: experimental (With CSA, confirmed by records and studied by interdisciplinary teams). These patients, belonging to public institutions in the Province of Córdoba (orphanages, Judicial Unit of the Province of Córdoba and Faculty of Dentistry), informed consent was approved by the ethics committee (by parent / guardian) and informed consent (children over 7 years), examination and decision stomatological cytology, lacquerfixed, stained with PAP, were evaluated by conventional light microscopy as Pap criteria, and through the SCANprogram Z, confocal microscopy to measure the cell volume in intermediate epithelial cells. **Results:** Group A comprised 73 patients (controls) with a mean age of 7.4 (+ -2.8). Group B: 46 patients, with a mean age of 7.4 (+ - 3.6). STDs presented in 30.43% in group B. A higher percentage of intermediate cells in both groups (52%), followed by superficial cells accounted for 37% in Group A and 35% in group B. No significant differences between groups found no differences in the classification by grades: Grade I (A: 32% B: 34%) and Grade II (A: 68% and B: 76%), showed lower cytomorphological features folding and grouping and lower residual eosinophilia in children than in adult patients. The cell volume was lower in children under 9 years of 50x 30x 10 microns. In Group B were observed in cases of STDs: granules, and koilocytes binucleation, which are considered surrogate markers of HPV infection. **Conclusion:** Exfoliative cytology reflects maturational changes in population control and adaptive changes and / or pathological STDs found. These allow the dentist by the interdisciplinary team diagnose child abuse.

Key words: exfoliative cytology, buccal mucosa, child sexual abuse

94

HISTOPLASMOSIS IN HIV+PATIENTS. A DESCRIPTIVE AND COMPARATIVE STUDY

Allende A, Villagra P, Piccioni O, Zaya A, Hernández SL, López de Blanc S.
Faculty of Dentistry. U. N.C.
adrianallende28@yahoo.com.ar

Histoplasmosis is a systemic disease, whose causal agent is the Histoplasma capsulatum. It has intracellular location specially in reticuloendothelial cells, and causes immunological changes in the body. Usually penetrates the respiratory system by inhalation of dust (earth) with broncopulmonar implantation and formation of granulomas. In Argentina is endemic in central, east and northeast regions. It may manifest as asymptomatic latent disease, primary pulmonary disease self-limited, chronic progressive lung disease (cavitary), as well as chronic disseminated form localized in one or more organs (oropharyngeal). **Objective:** The objective of this study is to describe and analyze features of histoplasmosis, in positive or negative HIV patients, with oropharyngeal lesions. **Methods:** A retrospective study of clinical records of patients attending those services during the period from May 2009 to May 2012. Sex, age, place of residence, laboratory parameters, clinical lesions and diagnostic methods employed were analyzed. **Results:** A sample of 19 patients, 13 HIV (+) and 6 HIV (-) was studied. The average age of HIV (+) was 43 years (range 24-85) and of HIV(-) 68 years (range 50-83). Although male sex was predominant in both groups, a high percentage of women (31%) among HIV +, in relation to HIV-(17%) was observed. The leukocytes of HIV + patients averaged 3778 with 68 CD4 (4-202) while in HIV- patients they were 6565 and 211 (31-388) respectively. Regarding clinical presentation, oropharyngeal solitary forms predominated in HIV- and most of the oral lesions of HIV + were part of a disseminated histoplasmosis form. The most frequent oral lesions were multiple painful ulcers specially in oropharynx, palate and tongue. There was less delay in diagnosis in the group of HIV + patients. The cytology and biopsy were the most effective diagnostic methods used. **Conclusion:** The diagnosis of oropharyngeal histoplasmosis in female or in people younger than 50 years is highly suggestive of HIV infection.

Key words: Oral Histoplasmosis - Immunosuppression - H.I.V.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

95

PEER LEARNING IN THE FACULTY OF DENTISTRY UNLP

Peñalva M A, Sala A, Ramírez S M and Blotto B
Faculty of Dentistry UNLP.
anahipenalva@hotmail.com

This work is for the research project peer learning in dental education in FOUNLP. **Objective:** Define the analysis indicators that guide research, explore the benefits and challenges of peer learning and the degree of student satisfaction with this modality. **Methods:** there is an open survey, 29 females and 21 males of Stomatology Biochemistry II course this year to investigate: the expectations of the course, the story of a peer learning experience, benefits and difficulties brought this dynamic and its relationship to the formation as a dentist. We define the indicators that guide the research: defining expectations; aspects taken into account in the narrative; degree of benefits and difficulties contributed and relationship between peer learning and training as dentists. **Results:** 100% of women said as knowledge learning expectation Similar responses were observed in 96% of men. The 2% refers to "the relationship with peers" and 2% did not respond. While not report group experiences, both girls and boys is satisfactory appreciation in 24.13% and 19.04%, good in 68%, 66% and insignificant in 6% and 14% respectively. Regarding the benefits, both students and pupils say the exchange of ideas 55.17% and 24.13%, greater understanding, 27.58% and 47.61% and higher ratio 17% and 13% respectively. Regarding the difficulties: in 34% of women recognizes no, 34% said "discussions" and the remaining 31% "disinterest". In men, 52% said no difficulty and the rest recorded distraction and discomfort. As for the relationship with vocational training, women express: 48% better relationship, discuss 31%, more research and 20% male: 71% relate better and achieve 42% agreement. **Conclusion:** We found a significant recognition and interest in this dynamic work, what motivates its emphasis in future proposals.

Key words: peer learning

96

PEER INTERACTION IN DENTAL MATERIALS IN FOUNLP

Sala A, Blotto B, Peñalva M A y Pamírez S M
Faculty of Dentistry UNLP.
anahipenalva@hotmail.com

The paper corresponds to a research project on peer learning in dental education in FOUNLP There is now a very present idea on the importance of peer work in vocational college. Explore, explain, inform, investigate, are fundamental activities to build learning and this is further strengthened when we put into play in situations of peer interaction. **Objective:** To create a space of mutual interaction in which students discuss, reflect and take ownership of knowledge applied in problem situations or practices **Methodology:** the universe was formed by 42 students who attended Dental Materials, randomly divided into groups of no more than four members performed a descriptive qualitative study characterized by an observational registry intended to gather information based on two-dimensional analysis (academic and social) with their respective indicators **Results:** with respect to the academic dimension shows a variety of behaviors depending on the groups may recognize that a significant number of students develop critical thinking (52%), shows interest in the topic (76%) and comprises (95%) achieved 60% expected to meet expectations regarding the oral communication regarding the social dimension are perceived different performances: 83% interact with the teacher, 71% interact with their peers and 60% are able to take the ideas of their peers. It is difficult to assess the extent to which reviews are designed to ideas and not to people **Conclusion:** significantly enthusiasm, commitment and understanding of the subject achieved by students against this type of work.

Key words: Peer interaction





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

97

MICROBIOLOGICAL EVALUATION OF CARIES RISK IN PATIENTS WITH RENAL INSUFFICIENCY

Rodríguez Yonseng L, Gutiérrez de Ferro M, Gutiérrez S.
Department of Microbiology. Faculty of Dentistry. UNT.
anahipenalva@hotmail.com

The **aim** of this work was to determine the level of cariogenic microorganisms and Veillonella considered as health indicator in patients with chronic renal insufficiency (CRI) that have dialysis treatment. **Methods:** there were studied 7 patients with CRI, of both sexes, aged between 11 and 22 years old and compared with a control group of 7 healthy patients. All of them signed an informed consent at the beginning of the investigation. Samples of unstimulated saliva were collected during the dialytic treatment (A) and after 48 hours of it (B). For the microbiological study the samples were sowed in Mitis Salivarius Agar + Bacitracin for the count of Streptococcus mutans Group (SmG), in Rogosa Agar for Lactobacillus (L), Saboureaud Agar for Candida (C) and Lactate Agar for Veillonella (V). The incubation was at 37^aC in oxygen and time conditions required for each microorganism in study. From the microbiological point of view the values of count (CFU/mL saliva) considered as caries risk were: for SmG >100.000, L >1000 and C >400. The results were expressed in CFU/mL of saliva. The Test of ANOVA was applied for the statistical analysis. **Results:** a) in sample (A) the level of SmG was lower than the cariogenic risk considered (60.640 + 45.700 UFC/ml saliva), while in (B) the values were =368.800 + 133.792. b) The count of L increases 2 days later in 4 patients and decreases in 3. c) Candida was not present in sample (A), being found in (B) at levels of =5.400 + 3.369 UFC/ml saliva. d) V decreases after 48 hours of dialysis. In all cases differences were not statistically significant (p>0,05). The counts of these microorganisms in the control group were into the values without caries risk. **Conclutions:** the count of cariogenic microorganisms in saliva maintains in low risk levels while patients are being dialyzed. At 48 hs the levels increase. Patients on dialysis would require special care and dental therapies.

Key words: chronic renal insufficiency – cariogenic microorganisms – caries risk.

98

BIOCOMPATIBILITY OF DIFFERENT GLASS IONOMER CEMENTS BY ANALYSIS OF CELL VIABILITY.

Rodriguez IA1, Alfonso CA2, Rozas CA1, Garzon I2, Rodriguez MA1, Ferraris ME1, Uribe Echevarria J1.
Facultad de Odontología, Universidad Nacional de Córdoba (Argentina)1. Grupo de Ingeniería Tisular,
Universidad de Granada (España)2. ismaelrodriguez18@hotmail.com

The glass ionomer cements are biomaterials used in the dentin-pulp complex protection. **The aim** of this study was to evaluate the viability of human gingival fibroblasts in contact with different glass ionomer cements, using morphological analysis and cell proliferation. Human gingival fibroblasts in 24-well plate at a concentration of 2x10⁵ cells/500 ul of DMEM culture medium were used. Cells were exposed for 72 hours to discs of 2 mm diameter and 1 mm of thickness of a glass ionomer cement conventional high viscosity (CIVAV) EQUIA Fil (GC Corporation), a conventional glass ionomer (CIVC) Easymix Ketac Molar (3M-ESPE) and a glass ionomer cement modified resins (CIVMR) Vitrebond (3M-ESPE). To analyze morphological alterations, cells were examined by light microscopy. For cell proliferation analysis WTS-1 technique was used. The fibroblasts cultured in DMEM medium (CM) were positive control and fibroblasts incubated in 2% Triton X (CT) were negative control. The results showed significant morphological changes in cells exposed to CIVMR cells characterized by spherical shapes. Cells exposed to CIVAV and CIVC showed normals forms. The cell proliferation assays showed a decrease in cellular activity with CIVMR respect to CM, while the CIVAV and CIVC cellular activity levels were similar to CM. **Conclusion:** The morphological analysis and cell proliferation determined that CIVAV and CIVC do not generate alterations on human gingival fibroblasts showing its biocompatibility in an in vitro experimental model and analyzed lapses.

Key words: glass ionomer cements, human gingival fibroblast, cell viability





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

99

IN VITRO DIFFUSION OF CALCIUM IONS AND HYDROXYLS OF THE CALCIUM HYDROXIDE PASTE WITH AQUEOUS VEHICLE USED AS MEDICATION BETWEEN SESSIONS.

Montiel Natalia B. - Finten Susana B. - Rocha Maria T. – Avalos Llano Karina R.
Facultad de Odontología. susanafinten@yahoo.com.ar

In vitro study of the diffusion of calcium ions and hydroxyls of calcium hydroxide paste with aqueous vehicle used as medication between sessions. The paste of calcium hydroxide intracanal medication is most often used when the treatment is not completed in one session. It is obtained by mixing calcium hydroxide with various vehicles and their mechanism of action is based on the dissociation of its ions, calcium and hydroxyl responsible for their antibacterial effects and tissue repair. **Objective:** To evaluate the ionic diffusion of calcium hydroxide paste used as intracanal medication with tridistilled water vehicle. **Methods:** We selected 15 teeth (upper and lower canines) to the cleaning and shaping of root canals with manual instrumentation. Subsequently, the teeth were filled with calcium hydroxide paste with tridistilled water vehicle, for storage in an oven at 37 ° C for 336 hours. At 3, 24, 72, 168 and 336 hours of storage was performed in triplicate determination of the pH with a Metrohm 692 pH meter and the total calcium concentration using the direct spectrophotometric method based on the reaction of calcium with the cresolphthalein complexone to pH 11. The data were recorded in a spreadsheet and statistically analyzed by ANOVA, using LSD test ($\alpha = 0.05$). **Results:** Initially the pH exhibited a value of 5.05 ± 0.09 . At 3 hs there was an increase of 49% from baseline. The pH continued to increase up to 336 hours at a value 61% greater than the first. The calcium content was initially null. After 24 hours, we detected a concentration of $2.69 \text{ mg / dL} \pm 0.40 \text{ mg / dL}$ and was then continuously and progressively increase to a value of $14.0 \pm 2.96 \text{ mg / dL}$ to 336 hours. **Conclusion:** The calcium hydroxide paste in tridistilled water vehicle applied into the root canal (CR) produced release and diffusion of ions through the dentine in direct relationship with the analyzed time (336 hours), with alkalizing action (pH 8.13). Hydroxyl ions mainly propagates within the first 3 h of storage (pH 7.5) reaching a maximum at a pH of from 8.13 to 336 hours (14 days), while the diffusion of calcium was more marked progressively during storage reaching a maximum of 14.01 mg / dL to 336hs.

Key words: distilled water, intracanal, dentinal tubules

100

MALOCCLUSION AND TREATMENT NEED IN PATIENTS OF THE DENTAL HOSPITAL, FACULTY OF DENTISTRY-UNNE

Peláez AN, Mazza SM.

Facultad de Odontología UNNE / Cátedra: Metodología de la Investigación. alin_pelaez@yahoo.com.ar

Objective: To evaluate the prevalence, severity and treatment need of malocclusion in patients with permanent dentition who attend the Dental Hospital, Faculty of Dentistry UNNE, according to the Dental Aesthetic Index (DAI). **Methods:** An observational, cross-sectional descriptive study was designed. There were selected 101 patients with permanent dentition, over age 12 through opportunistic sampling. The DAI was applied clinical exam, ten variables set by the index were analyzed, determining the dentition, space and occlusion. The dentition was evaluated by recording the number of visible lost teeth. The space was evaluated in relation to crowding and spacing in the incisal segment, presence of diastema and maxillary and mandibular anterior irregularity. The occlusion was evaluated based on the measurements of the anterior maxillary and mandibular protrusion, open bite and anteroposterior molar relation. Variables expressed in millimeters were taken with calibrated sound, the methodology used was the recommended by WHO, according to the Oral Health Epidemiological Survey Basic Manual. The equation DAI was applied to the value of the ten variables evaluated, as a result it was determined the severity of malocclusion and orthodontic treatment need of each patient based on the range of the index weighting. For statistical analysis, it was performed an exploratory data analysis using the SAS software (Statistical Analysis Software). **Results:** 66% of patients tested had malocclusions that require orthodontic treatment. According to DAI, the distribution was: 17% with severe malocclusion, being orthodontic treatment very desirable and 49% with very severe malocclusion, in this case the treatment is obligatory. **Conclusion:** Our results demonstrated the high prevalence of malocclusion manifested in our region, where 66% of the patients need orthodontic treatment according to DAI.

Key words: Dental Aesthetic Index - Prevalence of malocclusion – Epidemiology.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

101

MICROANALYTICAL ANALYSIS OF DIFFERENT BONE PARTICLES USED IN GUIDED BONE REGENERATION. Rodriguez IA1, Torassa D1, Sanchez Quevedo MC2, Pascualini C1, Alaminos M2, Fernandez Boderau1 E, Ferraris ME 1Facultad de Odontología UNC (Argentina)1 , Grupo de Ingeniería Tisular Universidad de Granada (España).ismaelrodriguez18@hotmail.com

The quantitative electron-probe X-ray microanalysis (EPXMA) is a technique widely used to determine the chemical composition of mineralized tissues. The **aim** of this study was to establish different patterns of biomineralization bone particles used in guided bone regeneration using EPXMA technique. **Methods:** Bone particles GenPhos HA TCP (Genius), Ostium (Biotar Group), UNC bone matrix (UNC, Biotecnia), Geistlich Bioss (Geistlich Pharma) and MinerOss (Biohorizons) were analyzed. As control human bone tissue obtained from surgery intraosseous retained teeth was used. For the microanalytical study samples were cryofixed in liquid nitrogen, freeze dried during 24 hours in a freeze drier Emitech 775 K apparatus, mounted on slides with graphite, carbon coated and examined in a scanning electron microscope Philips XL30 with an X-ray detector EDAX DX-4. For x-ray microanalysis, the analytical conditions were: voltage = 15 kV, spot size = 500 nm, surface angle = 35°, angle of perception = 61.34°, counts per second = 1200 and accounts accumulation time 50s. Qualitative analysis to detect Ca and P and a quantitative analysis to determine the amount in mmol / kg of dry weight of these elements were performed. For the quantitative study salts of Ca and P standards and the peak-to-local background (P/B) ratio method were used. To compare the different experimental groups parametric test student were used. The **results** were for Ca: GenPhos = 22.97; Ostium = 20.73; UNC bone matrix = 18.79; Bioss = 13.87; MinerOss = 10.65; Control = 24.09, for P: GenPhos = 11, 93; Ostium = 11.25; UNC bone matrix = 10.68; Bioss = 7.04; MinerOss = 19.52, Control: 13.14. All bone particles possess a statistically lower Ca concentration respect control. MinerOss presented a statistically higher P concentration with respect to other bone particles and control. The concentration of Ca and P were statistically similar in UNC bone matrix and Ostium. Ca/P ratio was statistically lower in MinerOss with respect to the other experimental groups. **Conclusion:** EPXMA allowed establishing mineralization patterns for different bone particles used in guided bone regeneration in dentistry.

Key words: electron-probe X-ray microanalysis, Bone particules, regeneration.

102

BIOCOMPATIBILITY ANALYSIS OF A COLLAGEN MEMBRANE FOR USE IN TISSUE ENGINEERING. Rodriguez IA1, Carriel S3, Roa A2, Vargas Corral A2, Campos A3, Gómez de Ferraris ME1. Cátedra Histología "B" Facultad de Odontología, UNC (Argentina)1, Grupo Máster Periodoncia2 y Grupo Ingeniería Tisular, Universidad de Granada (España)3. ismaelrodriguez18@hotmail.com.

The collagen scaffolds are used for the construction of artificial tissue in tissue engineering techniques. These scaffolds must be biocompatible so that cells can adhere in them, proliferate, migrate and differentiate. The **purpose** of this study was to evaluate the biocompatibility of a collagen-based membrane using morphological and viability analysis in human gingival fibroblasts. **Methods:** Bovine pericardial membranes CopiOs (Zimmer Dental Inc.) sectioned into pieces of 0.5 x 1 cm and placed in 4 wells chamber were used. These were previously hydrated in PBS and once in the wells they were cultured with human gingival fibroblasts in a concentration of 2x10⁴ cells/1 ml of DMEM culture medium. The biocompatibility of the membranes was evaluated at 24 hours, 7 and 14 days by morphological and Live & Dead (Invitrogen) viability analysis. Samples were observed in a fluorescence microscope Nikon Eclipse Ti (Nikon) and analyzes were performed in triplicate. The **results** showed that the cells adhered to the membrane were normal spindle-shaped. They expressed the Calcein (green) indicating the presence of viable cells and an increase of this cell population at different times analyzed. **Conclusion:** The morphological and viability analysis in human gingival fibroblasts showed that bovine pericardium membrane collagen-based is biocompatible when was analyzed at different times and therefore could be useful as a scaffold for the construction of artificial tissue by tissue engineering techniques.

Key words: Biocompatibility, collagen membrane, tissue engineering.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

103

SUBMANDIBULECTOMY AFFECTS THE MANDIBULAR BIOMECHANICS IN GROWING RATS. Amer M1, Lopez Soria G1, Elverdin JC2, Chiarenza AP3, Mandalunis P4*, Vacas MI3. Cát. Anatomía1, Cát. Fisiología2, Cát. Bioquímica General y Bucal3, Cát. Histología y Embriología Fac. Odontología, UBA. marianoamer@gmail.com

Previous works indicates that, in the rat, the submandibulectomy (SMGx) increases the marginal alveolar bone loss without affecting interradicular bone and exacerbate bone characteristics in postextraction alveolar wound healing. **Objective:** to evaluate the mandibular biomechanics response in growing rats with SMGx. **Methodology:** Male Wistar rats (300-330g, n=30), 21 days old, were submitted or not to SMGx. Both groups were sacrificed 9 weeks post-surgery or sham operation. On mandibles, it was determined: 1- buccal and lingual distance from cement-enamel junction to alveolar crest (CEJ-AC) and from CEJ to occlusal surface border (CEJ-OB) of the three lower molars; 2- mandibular morphometry; 3- mandibular bone mineral density (BMD); 4- mechanical properties by using a three-point bending mechanical test to obtain a load/deformation curve and estimate the structural properties of the bone. **Results:** (expressed as Mean \pm SEM): SMGx: 1- increased buccal and lingual cortical alveolar bone lost (CEJ/AC (mm): lingual: C: 0.930 \pm 0.046; SMGx: 1.210 \pm 0.026, p<0.001; buccal: C: 0.515 \pm 0.030, SMGx: 0.701 \pm 0.037 p<0.01); increased attrition-abrassion on occlusal surface (CEJ-OL (mm): lingual: C: 1.485 \pm 0.027; SMGx: 1.158 \pm 0.031 p<0.001; buccal: C: 1.038 \pm 0.028; SMGx: 0.795 \pm 0.038 p<0.001)). 2- decreased length of the molar process (C: 7.56 \pm 0.14; SMGx: 7.06 \pm 0.07, mm, p<0.01), and decreased length (C: 6.76 \pm 0.06, GSMx: 6.51 \pm 0.07, mm, p<0.05), and width (C: 7.24 \pm 0.11; SMGx: 6.86 \pm 0.12, mm, p<0.05) of condilar process. 3- increased, (without significance) mandibular BMD, without changes in body BMD. 4- increased mandibular structural bone properties: stiffness (C:55.62 \pm 10,34; SMGx: 94.99 \pm 6.16, p<0.05); fracture load (C: 43.27 \pm 4,64; SMGx: 60.63 \pm 2.84, p<0.05) and yielding load (C:47.48 \pm 1.86; SMGx: 60.95 \pm 2.84, p<0.01). **Conclusion:** Present results suggest that in the growing rat, SMGx modified mandibular structural bone properties but not the BMD, increasing the fracture load limit during the elastic period. These changes would be result from the mandibular response to occlusal trauma and molar tooth friction, plus alveolar extrusion.

Key words: Submandibulectomy, occlusal loading, mandibular biomechanics.

104

SOCIODEMOGRAPHIC AND FAMILY ASPECTS, AS MOTIVATORS IN THE ELECTION OF THE CARRER IN DENTAL STUDENTS. UNC - UCC. Dagum Sanchez M, Hernando L, Gosso C, Mandozzi M, Marega G, Rubinstein J, Sanz A, Tarifa S. Preventive and Community Dentistry. Fac of Dentistry. UNC. Department of Social and Preventive Dentistry UCC Córdoba. msdagum@odo.unc.edu.ar

Objective: To identify factors dependent of the student and family environment that characterize their profile in the UNC public university and private in UCC, and motivation in the choice of career. **Method:** qualitative - quantitative, descriptive, transversal, and correlational study, with application of an adhoc questionnaire instrument in selected sample: 150 students and 45 UCC UNC. Data analysis was performed using relative frequency, and its 95% confidence interval. p <0.05 for significance. **Results:** the mean age of the students surveyed in UNC 22.08 years and 21.7 years in UCC which yields no significant differences, parents of students of the UCC, the College relatives is 53.33%, of which 8, 33%, dentists. In U.N.C. were 46.67% and 10% of dentists. Regarding mothers (UCC), 40% are university, and any Dentist, at UNC, with college degree 67%, 11% being the dentists. Regarding the variable: Motivation in the choice of career, UNC, 94.67% on selected categories: 18.3% Test career, family influence 21.12%, 16.9% Labour Market, by choice 40, 84%, and 2.81% motivation was influenced by the employment relationship with the same. Of the respondents, 84% UCC chose some of the proposed categories, resulting: 26.31% Test career, family influence, 26.31%, 31.59% Labour Market, 15.79% by choice, so that family influence and the presence of dental professionals in the family not related significantly from the "professional heritage", if for the choice of the variable career professional influence affected the choice of the same in these students, noticing, more marked on UCC students, regarding the UNC, when analyzed in relation to other categories studied. The category "by Choice", is relevant in decision making for career choice at UNC, as labor market in UCC. **Conclusion:** knowledge of the profile of their students, and suggests new paradigms rethink universities students that means the possibility of a University in accordance with the times of the UNC SeCyT globalización. Subsidy 2010.

Key words: Dental Students, career choice, Córdoba, R.A.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

105

TACTICS AND SKILLS IN PREVENTIVE DENTAL PRACTICE.

Sica Sanchez M N, Sanchez Dagum M, Sanz A.

Preventive and Community Dentistry I. Department of Social and Preventive Dentistry Faculty of Dentistry, UNC. Córdoba.noesica@hotmail.com

Objective: to guide the transfer of comparable situations to the professional field of the future, with preventive attention on promoting students thought processes complex interdisciplinary integration. **Method:** the following is a work qualitative-quantitative, which discusses the assessment of students in relation to the theoretical and practical activity. It is intended for regular students of the subject Histology of the Faculty of Dentistry at the U.N.C. It is done in the framework of a theoretical and practical of two hours and a half, in a regular classroom during the school year. After a theoretical introduction, the students gathered in groups of three, must perform the analysis of the factors that influence health, order and prioritize these factors and incorporate a list what activities Basic Healing in an estimated twenty minutes to finish the activity, it takes a whole fifteen minutes to establish findings involving teachers, and students are given a questionnaire for them to analyze the activity. **Results:** the activity is carried out since 2009 with a total of 240 students with a questionnaire where students highlighted the positive 190 (79.16%), negative 10 (2.4%) and to improved 40 (16, 66%) activity. Variables of the Class considered: organization, time, place, Teachers: treatment of content, activities of Basic Healing. These variables were classified as good, fair and poor. We also analyzed the priorities of the factors that influence health. **Conclusion:** we highlight the acceptance of this methodology. The enthusiasm of the students in the activity and coordinated work of teachers, facilitated the integration of the contents of both materials. The results demonstrate that the proposed activity is positive for interdisciplinary integration and fostering relationships inter subject.

Key words: Preventive Dentistry, Health Factors, Health Basic.

106

DIFFERENCES IN THE PARENTAL PERCEPTION OF QUALITY OF LIFE RELATED TO ORAL HEALTH IN PRESCHOOLERS. MENDOZA-ARGENTINA

Fernández C N; Squassi A F.

Facultad de Odontología U.N.Cuyo. claudia.n.fdz@gmail.com

Objective: To establish the differences in parental perception of quality of life related to oral health in preschool children at Mendoza City, associated with socioeconomic status, dental status and dental care demand. **Method:** purposive sample of preschool children from urban (n = 148) and urban-marginal schools (n = 155) at Mendoza city. Indicators: dmft, DMFT, and discriminated components, including white spots; ECOHIS and structured survey of dental care. It were calculated: frequency distribution and confidence intervals for each variable, central tendency measures and dispersion; association between variables: chi square, Mann Whitney, Kruskal-Wallis tests and Spearman rho correlation, p <0.05. **Results:** The mode of ECOHIS survey scores was 1. In the preschool marginal urban children the only item that showed a statistically significant relationship with the severity of the dental status was the perception of pain. ($\chi^2 = 28.203$, p = 0.020). There was a positive correlation between both variables in 11 ECOHIS questions. In the urban sample it showed significant association with severity of dental status: pain perception ($\chi^2 = 54.308$, p = 0.00), drinking difficulty ($\chi^2 = 28.326$, p = 0.02), sleep ($\chi^2 = 29.042$, p = 0.00), to laugh or smile ($\chi^2 = 18.671$, p = 0.028), parental guilt and discomfort by oral problems of their children ($\chi^2 = 36.679$, p = 0.00). There was a positive correlation for all questions related to severity of dental status. Association was observed between ECOHIS and demand of dental care (Kruskal Wallis 17.891, p = 0.00). Using Mann-Whitney test the two populations were compared and it was found a statistically significant relation in 7 of the 13 ECOHIS items. **Conclusion:** Parental perception of quality of life for oral health is low in both populations, being the pain the most perceived. The tendency to increase when dmft + DMFT is higher is most noticeable in urban school children but in urban-marginal tend to be perceived more intensely. Visit the dentist increases parental perception of quality of life related to oral health

Key words: quality of life, dental caries, preschoolers, social economic status.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

107

PROYECT. EFFECTIVENESS COMPARATIVE STUDY OF A PREVENTIVE FLUORIDE BASED PROGRAM BY SCHOOL SOCIAL- ECONOMIC AMBIT

Fernández C N; Vuoto E; Cambría Ronda S; Borjas M I; Cabrera D; Vuoto J I; Affronti S; Rubio C; Sales C; Busetti ; Forconi E; Brachmann M P. Facultad de Odontología U.N.Cuyo. claudia.n.fdz@gmail.com

Objective: To establish the differences in the effectiveness of a prevention program based on fluorides in preschoolers of different socio-economic status. **Method:** This project is an analytical study comparing two prospective intervention trials to two years. It replicates on urban preschoolers a preventive program evaluated in urban- marginal. It is based on health education, oral hygiene techniques supervised teaching and topical application of professional fluoride. It will be applied to children attending four-year rooms from two urban public schools at Mendoza City (n = 100), along the five year room and at the beginning of first grade. Control group: children attending five years and first grade at the time of the baseline examination (n = 100). **Results:** The results will be evaluated at one and two years from implemented the program. It will be compared with the results obtained with the same program for children of low-income urban area, with the aim of finding possible differences in terms of socio-economic determinants of the disease. Indicators: percentage of caries-free, dmft + DMFT, DMFS cpos + and values discriminated ICDAS II category means, plaque index of Loe and Silness, Bordoni caries treatment need index. It will be identified: frequency distribution and confidence intervals for each variable, central tendency measures and dispersion, comparisons between groups using t test and chi square (p = 0.05 level). **Conclusion:** fluorides based programs have been extensively tested for their efficiency, effectiveness and efficiency. The social setting determine variations in results across countries or communities. Thus the assessment of effectiveness of preventive programs based on health education and fluoride in Mendoza's preschoolers and the particularities of each subpopulation mean a consistent contribution to the design and choose provincial or communal programs, with the objective to resolve these children oral health situation.

Key words: school fluoride programs, socio-economic status, effectiveness.

108

EFFECT OF MELATONIN ON ALVEOLAR BONE LOSS IN RATS WITH EXPERIMENTAL PERIODONTITIS.

Cabrita ML1*, Mandalunis PM1, Vacas MI2. Department of Histology and Embriology1, Department of General Biochemistry and Bucal2. School of Dentistry, University of Buenos Aires, Argentina. lorenacabrita@gmail.com

Introduction: Melatonin hormone (MEL) has potential therapeutic implications properties in dentistry. Within its effects include antioxidant, immunomodulatory, antiinflammatory, promoter of bone formation and collagen type I synthesis. MEL administration during the production of free radicals, such as acute and chronic inflammation decreases tissue injury. **Objective:** To study in the rat the possible protective role of MEL on alveolar bone loss in a model of experimental periodontitis (EP). **Methods:** EP was induced in male Wistar rats (200-210 g, n=20) by placing a cotton threadligature around the lower left first molar for 96 hours. Contralateral molars were used as controls. MEL (2mg/100g body weight) or vehicle (Veh) were injected intraperitoneally 30 min before and 4 hours after EP (day 1) and once daily until euthanasia. The jaws, were extracted, fixed, decalcified and embedded in paraffin. On digital microphotographs of mesio-distal sections stained with H&E, the following histomorphometric parameters of interradicular bone of first molars were evaluated: height of the periodontal ligament (hPL, um), percent of total bone volume (BV/TV)(%) and partial bone volume (coronal section (BV/TVp)(%). **Results:**(expressed as % of the differences between paired samples, mean ± ES) MEL reduced the bone loss induced by EP however, differences only attained significance at the coronal section (p<0.05) (hPL: Veh:390±56; MEL:290±55; BV/TV(%):Veh:37.8±5.1; MEL:24.7±7.2; BV/TVp(%): Veh:62.4±5.9; MEL:44.7±6.4). **Conclusion:** The results, although preliminary, suggest a possible protective effect of MEL on EP-induced alveolar bone loss. UBACyT 20020090100210.

Key words: periodontitis, melatonin, alveolar bone loss.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

109

ALTERED EXPRESSION OF CONNEXIN43 IN RATS' INCISORS WITH DENTAL FLUOROSIS.

Centeno VA, Fontanetti PA, Interlandi, V., Ponce RH, Gallará RV.
Cátedra "A" de Química Biológica. Facultad de Odontología. Universidad Nacional de Córdoba.
vcenteno@odo.unc.edu.ar

Excessive intake of fluoride (F⁻) during tooth mineralization causes alterations of the cellular structure and function. Intercellular junction molecules, including, connexin 43 (Cx43), are important for dental development as control growth and cell differentiation. Furthermore, alkaline phosphatase (AP) contributes to mineralization process. In previous work we demonstrated that the F⁻ alters the expression of tight junctions molecules. **Objective:** To study the effect of chronic exposure to F⁻ upon the expression of Cx43 and other morphological and functional parameters in rat incisors. **Methods:** Male Wistar rats drank from 22 days of age, for 8 weeks, water with different concentrations of NaF: a) 0.3 mg/L (control), b) 10 mg/L (T1) and c) 50 mg/L (T2). The animal body weights were recorded at the beginning and at the end of treatment, and water intake was measured daily. The urine F⁻ was measured with an ion selective electrode. In digitized images of radiographs were analyzed morphometric parameters in mandible and diameter of incisors. In the pulp tissue of upper teeth AP activity was determined and Cx43 gene expression analyzed by RT-PCR. **Results:** There were no differences in daily water intake or body weight gain between groups. Urine F⁻ values were higher in T1 and T2 animals compared to control (p<0.01). None of mandibular growth parameters were affected by treatment. The diameter of the lower incisor in T2 rats was lower compared to control (p=0.0047). The AP activity was higher in incisor pulp of treated rat respect to control (p<0.05). Cx43 gene expression increased by exposure to F⁻ in dose-dependent manner (p<0.05). **Conclusion:** fluorotic lesions in dental tissue are associated to alterations in AP activity and Cx43 expression, both molecules involved in dental tissue mineralization. It is possible that the observed changes are part of the molecular mechanism triggered by F⁻ during dental fluorosis development.

Key words: fluorosis, dental pulp, connexin 43.

110

EFFECT OF ATMOSPHERIC HYPOXEMIA ON GROWTH AND BONE BIOMECHANICAL QUALITY IN PREPUBERTAL RATS.

Bozzini C, Champin G, Alippi RM, Bozzini CE.
Department of Physiology, Foub. cbozzini@free.fr

Objective: Atmospheric hypoxemia (AH) is a subnormal arterial pO₂ in response to a decreased atmospheric pO₂. It was induced in rats through 30-d exposure to simulated high altitude (SHA) in hypobaric chambers. The objective was the assessment of the effects of increased SHAs on body growth and biomechanical quality of femoral shafts (cortical bone). **Methods:** 1) experimental subject: female Sprague-Dawley rats aged 30d, divided in 5 groups (n=7/g) and exposed to 0, 1850, 2900, 4100 and 5450 m for 30d; 2) Determination of body weight (g) and biomechanical properties of femur (3-point bending): "geometric" = weight and length, diameters at the transversal cross-section, cross-sectional area (CSA), cortical and medular areas (CtA, MA); "structural" (whole bone) = load at fracture (Wf), load at yield (Wy), diaphyseal stiffness (Wydy); and "material" = elastic modulus (E), maximal elastic stress. Calcination, ash weight, Ca concentration in ashes. ANOVA and post-test. **Results:** 1) body weight gain (g/d) as function of SHA (m): 0 = 3.5 ± 0.2 (SD), 1850 = 3.2 ± 0.1, 2900 = 2.9 ± 0.1, 4100 = 2.2 ± 0.1, 5450 = 1.98 ± 0.2. Correlation b.wt gain / SHA, r²= 0.934. Significant reduction for 4100 and 5450 m. 2) geometric and structural properties with significant reduction for 4100 and 5450 m. Correlation r² = 0.727 between Wf and b.wt for all animals. 3) material properties were not affected at any SHA, as were Ca concentration in ashes and degree of mineralization of bone. **Conclusion:** 1) Atmospheric hypoxemia negatively affects body growth rate with a threshold of 2900 m; 2) both geometric and structural bone properties are similarly affected; and 3) material properties of bone tissue are not affected. The negative effects of bone quality should be the consequence of the subnormal bone mass growth rate that occurs pari passu with the depressed body growth rate. PROJECTS (UBACYT) 2002010010067 and 20020100100389.

Key words: hypoxemia - growth - bone quality - bone biomechanics.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

111

FEMORAL (CORTICAL) BONE QUALITY IN RATS FED A DIET CONTAINING INADEQUATE AND INCOMPLETE PROTEINS.

Bozzini CE, Champin G, Ríos E, Bozzini C, Alippi RM.
Department of Physiology, FOUBA. cebozi@fisio.odon.uba.ar

Objective: Bone quality (BQ) is influenced by mechanical (body weight, regional muscle contractions) and non mechanical factors. Concentration and quality of dietary proteins are included among the latter. The present investigation was designed to estimate the influence of a diet containing inadequate (lack of essential AA) and incomplete (incapacity to support growth) aminoacids on the BQ of cortical bone, represented by the femoral shaft. **Methods:** 1) Experimental subject: female Sprague-Dawley rats (N = 40, age = 30d); 2) Control (CD) and Experimental (ED) diets were offered ad lib to 4 groups (N = 10): C40 (CDx40d), E40 (EDx40d), C105 (CDx105d), E40-105 (EDx40d followed by CDx65d). CD = standard diet; ED = cornstarch (cornflour) supplemented by vitamins and minerals; 3) Biomechanical properties of femoral diaphysis assessed by the 3-point bending test. Structural properties (whole bone, load at yield, load at fracture, structural stiffness) and material properties (intrinsic of the bone material, elastic modulus and maximum elastic stress). Geometric properties, estimated through measurements of femoral weight and length, cross-sectional area (CSA), cortical (CtA) and medullary (MA) areas, moment of inertia (xCSMI). Calcination, ash weight, calcium concentration in ashes, degree of mineralization. ANOVA and post-test. **Results:** 1) Significant reduction of geometric properties in E40 group in relation with lack of increment in body weight; 2) Structural properties: highly significant reduction in diaphyseal strength and stiffness, with reduction in the load necessary to initiate plastic deformation of the bone (microcracks) in ED group, with high correlation between both load at fracture and stiffness and body weight; 3) Material properties: ED did not induce alterations in the intrinsic properties of the bone material. Ca concentration and degree of mineralization were normal. All the analyzed bone properties experimented catch-up during the nutritional recovery (DE40-105) which, in general, was incomplete. **Conclusion:** bone quality in rats fed a diet containing inadequate and incomplete proteins is negatively affected because of a subnormal gain in bone mass without alterations in the constitutive mineralized tissue. Such a change is reversible.

Key words: bone quality - cortical bone - nutrition - bone.

112

ESTIMATION OF CHRONOLOGICAL AGE THROUGH THE CERVICAL VERTEBRAE

Alderete MV, Avellaneda RV, Aragón HN., Gordillo ME., López ME.
Dentistry Faculty, UNT.
virgi_al@hotmail.com

Skeletal maturation/bone age is usually assessed by the bone morphology and its mineralization. However, it can also be evaluated through specific bones such as those of the hand or the cervical vertebrae. Cervical vertebrae have been extensively studied and are as reliable as Tanner Whitehouse method. Chronological age can be estimated through the dental age, being the Willems method the most accurate in different populations' studies. This method adapts Demirjian's rating scale to years. **Aim:** To analyze if the chronological and dental ages of a pediatric population from Tucumán, Argentina, could be determined through cervical vertebrae measurements in lateral cephalometric radiographs. **Methods:** We randomly selected 20 children (9 boys and 11 girls, aged 5 to 12) attending radiographic services to get previous studies for orthodontic treatment. Lateral cephalometric and panoramic radiographies were obtained. Measurements were performed in the 3rd and the 4th cervical vertebrae with Sidexis XG software (Siemens Germany) calibrated in a real scale. Each measurement was classified as follows: anterior vertebral body height (AH), vertebral body height (H), posterior vertebral body height (PH) and anteroposterior vertebral body length (AP). The Willems method was applied on panoramic radiographs to calculate the dental age. The chronological age was obtained as the difference between the birth and the study dates. Results for the chronological ages (dependent variable) and the vertebral measurements (independent variable) were statistically analyzed through the linear regression test. **Results:** R2 measurements were: AH3=R2=0.59, AH4=R2=0.65, H3=R2=0.49, H4=R2=0.019, PH3=R2=0.70, PH4=R2=0.74, AP3=R2=0.098, AP4=R2=0.12. The analysis between dental age calculated with Willems method, and chronological age showed no significant difference $p > 0.05$. **Conclusion:** The results suggest that C3 and C4 measurements in lateral cephalometric radiographs could determine the chronological and dental ages of a pediatric population from Tucumán, Argentina.

Keywords: bone age, dental age, cervical vertebrae





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

113

EFFECT OF PRILOCAINE ON CA-ATPASE. MODULATION BY CALCIUM AND CALCIMYCIN.

Di Croce DE, de la Cal C, Sánchez GA, Takara D

Biophysics Department, School of Dentistry, University of Buenos Aires, Argentina.
anieldicroce19@hotmail.com

Objective: Sarcoplasmic reticulum (SR) Ca-ATPase activity is the main relaxation factor of contracted skeletal muscle (SM). This enzyme catalyzes the cytosolic calcium (Ca) removal and the cation concentration thereby decreases in this compartment. The inhibition of the calcium pump by local anesthetics could account for physiopathological conditions such as muscle rigidity. The aim of this work was to study the action of prilocaine on the Ca-ATPase activity, calcium transport and its modulation by Ca and calcimycin. **METHOD:** SR membranes from rabbit skeletal muscle were isolated as sealed vesicles with calcium accumulation ability as described by Champeil et al.(1985). The protein concentration was measured as described by Lowry et al.(1951) and ATPase activity according to Baginski et al.(1967). ATP-dependent calcium uptake was determined by a radioisotopic technique. Results were statistically evaluated by ANOVA ($p \leq 0.05$). **RESULT:** Prilocaine (P) inhibited ATPase activity. In the presence of calcimycin the inhibited fraction was higher than in its absence, in the studied [P] range (3-90mM) there was a statistically significant difference (F with/without ionophore=210.9, $p \leq 0.001$ n=6), because it prevented intravesicular Ca accumulation, as well as for different [P] (Fprilocaine=357.9, $p \leq 0.001$ n=6), except for 60 and 90 mM, which was described to the high [P]. Ki values as a function of [Ca] increased up to a constant value with and without calcimycin, and there was a statistically significant difference (F=3.7, $p=0.030$; F=176.5, $p \leq 0.001$). In the absence of ionophore, the activity value was significantly higher than that obtained for Ca uptake (F=204.7, $p \leq 0.0001$) and both decreased with increasing [P] (F=59.9, $p \leq 0.0001$). The pre-exposure of the enzyme to the anesthetic increased the ATPase activity. The obtained results suggest that prilocaine increases the membrane permeability to Ca. However, this cation prevents the action of prilocaine. **Conclusion:** Prilocaine inhibits and/or activates the SR membrane Ca-ATPase. The action of P depends on calcimycin and [Ca]. Ca reverts the action of P on the membrane. P has a dual effect on Ca-ATPase, a direct interaction on the calcium pump and an indirect interaction with the bilipid membrane. Grant UBACyT 20020110100082.

Key words: prilocaine, Ca-ATPase, calcium transport

114

PREVOTELLA SP AND PORPHYROMONAS SP IN CHRONIC PERIODONTAL DISEASE IN INDIVIDUALS OF CORRIENTES, ARGENTINA. PRELIMINARY STUDY.

Ortega S, Monzón J, Sin C

Facultad de Odontología – UNNE. silviaortega14@yahoo.com.ar

This study examined the prevalence of Prevotella sp and Porphyromonas sp subgingival plaque in patients with periodontal disease (PD). **Methods:** Design nonexperimental, cross-sectional, random. Subjects were between 35 and 65 years of age and both sexes. Thirteen patients with some form of periodontal disease were examined. Clinical history medical, dental and periodontal examination determining different degrees of severity by probing with a periodontal probe: mild periodontal disease to 4 mm (EPL), moderate to 6 mm (EPM), severe over 6 mm (EPS). Subgingival plaque was collected from a deep pocket in two teeth for placing two paper points leaving 30 seconds. The samples were transported in RTF (fluid transport reduced) until laboratory processing in two hours before and used for both organisms. For isolation of Prevotella sp Brucella agar seeded with ovine blood enriched, hemin, vitamin K, kanamycin and vancomycin were used for GMColumbia sp Porphyromons enriched with sheep blood, hemin and vitamin K plus vancomycin and colistin. Isolated colonies were retained for further characterization. **Partial Results:** A total of 26 sites with periodontal disease were isolated colonies compatible with Prevotella sp EPS 31%, EPM 18.75% and 6.25% in EPL. To Porphyromonas sp were studied 22 sites being found colonies supported by 9.9% in EPS, EPM 31% and 18% in EPL. **Partial conclusions:** isolated colonies are compatible with the macro and microscopic bacteria studied.

Key words: periodontal disease, subgingival biofilm, Prevotella, Porphyromonas





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

115

STRUCTURAL CHANGES IN CARIOGENIC MICROORGANISMS BY THE ACTION OF XENOPHYLLUM POPOSUM. Torres S, Tracanna M, González AM, Ferro M., Gutiérrez S. Department of Microbiology. Faculty of Dentistry. Department of Pharmacognosy. Faculty of Biochemistry, Chemistry and Pharmacy. UNT. S. M. de Tucumán. sofiatorresar@gmail.com

The use of antimicrobial substances can be applied for the control of oral caries as adjuvant of oral hygiene. In the search for new compounds with antimicrobial activity on microorganisms associated to caries, our research group demonstrated the inhibitory and bactericidal activity of *Xenophyllum poposum* (Xp), an Argentine Northwest regional subshrub. In previous studies it was determined *in vitro* the minimum inhibitory concentration (MIC) and minimum bactericide concentration (MBC) of an ethanolic extract (EE) of this regional plant on microorganisms related to oral caries (*Streptococcus mutans* (Sm), *Streptococcus sobrinus* (Ss) and *Lactobacillus casei* (Lc). The MBC found for the EE of Xp for Ss and Sm was 13, 7 mg/ml and for Lc 27,4mg/ml. The **aim** of this work was to analyze with the transmission electron microscope (TEM) the effect of the MBC of EE Xp on cellular structures of Sm, Ss and Lc. **Methods:** The strains were activated in Brain Heart Infusion Broth (BHIB) and confronted to the EE of Xp, during 48 hours, at a concentration of 27,4 mg/ml for Lc and 13,7 mg/ml for Sm and Ss. Then the samples were centrifuged, the supernatant was removed, washed with sterile distilled water and added a fixative to the sediment for its preparation and analysis in TEM. There was a microorganism growth control without the inhibitory substance. **RESULTS:** the EE of Xp produced irreversible damage especially at cell wall and cytoplasmic membrane of microorganisms under study. In some cells were observed areas that can be interpreted as cytoplasm vacuolation. **CONCLUSIONS:** *Xenophyllum poposum* has an antibacterial effect on Sm, Ss and Lc acting principally on the cell wall, therefore this natural antimicrobial could be employed in the chemical control of cariogenic microorganisms. Subsidized by CIUNT.

Key words: Xenophyllum poposum - Cariogenic Microorganisms

116

PREVALENCE AND RISK FACTORS OF DENTAL EROSION IN SCHOOLCHILDREN IN BUENOS AIRES
Sorazabal A, Passarini L*, Pistochini A, Doño R, Argentieri A . Cátedra de Odontología Preventiva y Comunitaria - Facultad de Odontología - Universidad de Buenos Aires. pasa_chakales@hotmail.com

Introduction: Dental tissue loss due to erosion has increased over the last years. According to world data, prevalence reaches 35%, depending on the indicators used and the studied population. **Objective:** To estimate the prevalence of dental erosion among Buenos Aires city schoolchildren and establish association with lifestyle-related factors. **Methods:** A descriptive observational study was conducted on 189 children attending schools in Buenos Aires city, mean age $x=8.48 \pm 2.3$, who gave their prior and informed consent. Exclusion criteria: patients with orthodontic appliances, at medical risk, and/or presenting disease affecting dental structures. A self-administered questionnaire inquiring about life style was completed, and erosion was diagnosed using Smith and Knight (S&K) and Smith (S) indexes. Results were statistically analyzed using central tendency and dispersion measures, chi square test, Spearman's correlation coefficient, and Odds Ratio. **Results:** Erosion-associated loss was observed in 65.6% of children according to S index and in 91.5% according to S&K index. Positive association was found between regular-soda consumption and S&K index ($X^2: 4.3 p=0.036$). The OR for soda consumption and S&K index was 2.9 (IC=1.03 – 8.49). No association was observed between erosion and the remaining beverages. **Conclusion:** Prevalence was high according to both indicators and positive.

Key words: Erosion; frequently consumed beverages; prevalence





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

117

VALIDATION OF DIFFERENT STERILIZATION PROTOCOLS IN CLINICAL ORTHODONTIC PRACTICE

Irazuzta ML*, Castillo G, Bregains L, Recio M, Castillo MC, Rezzónico MS, Castillo B, Priotto E, Zárata A
Facultad de Odontología, Universidad Nacional de Córdoba.
marialaurairazuzta@yahoo.com.ar

Objective: In 2010 we evaluated the sterilization process for metallic and nonmetallic instrument used in the orthodontic clinical and unsatisfactory bacterial loads were found; in 2011 new sterilization protocols were evaluated in the same instruments and it was also found contamination. The aim of this study was to evaluate new sterilization protocols commonly used in clinical wards. **Methods:** The study was conducted at Dentistry Faculty, Cordoba National University, Cordoba, Argentine. We studied 10 sets of pliers and 10 sets of acrylics retractors, for each protocol. There were two moments of study: 1) Before using the instrument in the patient and 2) after patient attention, after *in situ* sterilization. **For pliers:** at moment 1, 3 protocols were compared, using for cleaning bi or tri trienzimatic detergent, glutaraldehyde or ortoofalaldehído for desinfection, and sterilized always by autoclave; at moment 2, 5 protocols were compared, always washing with trienzimatic detergent, desinfecting with glutaraldehyde or orthofalaldehído, desinfecting and sterilizing oven dry or sterilizer quartz balls. **For acrylic retractors:** at moment 1, 3 protocols were compared using for cleaning bi or tri trienzimatic detergent, glutaraldehyde or ortoofalaldehído for desinfection and ethylene oxide camera for sterilization; at moment 2, 5 protocols were compared, washing with trienzimatic detergent, desinfecting with glutaraldehyde or ortofalaldehído and making final rinse with tap or distilled water. Bacteriological progress was made relevant for microbiological analysis of samples taken at times 1 and 2. It was considered 10^5 CFU as contamination. **Results:** No contamination was found. **Conclusion:** The strict enforcement of the washing, desinfection and sterilization process of the metallic and nonmetallic instruments allowed achieve effectiveness of the sterilization process. Each professional, reflecting on their own clinical practices may develop its protocol, taking into account international standards and the characteristics of their practice as health professional.

Key words : orthodontics, sterilization, effectiveness protocol

118

PREVALENCE OF DENTAL CARIES EXPERIENCE AMONG SCHOOL CHILDREN AGED 6 AND 12 IN ARGENTINA.

Ulloque J, Colombo Y, Luna De Rodriguez T, Zarza A
Confederación Odontológica de la República Argentina. mjulloque@hotmail.com

The Dental Confederation of Argentina with its National Commission for Prevention needs to assess the oral health of school-age population in our country in order to develop preventive programs. **Objective:** To determine the prevalence of caries in school children aged 6 and 12 belonging to urban, both, public and private, and rural schools, in Argentina. **Methods:** A national exploratory survey following WHO criteria for epidemiological studies of oral diseases was conducted. A stratified sampling technique with groups of people from different urban and rural locations of 17 provinces was used. 4363 6-year-old children and 3422 12-year-olds from urban and rural schools, both private and public were examined. Dentists from the Commission for National Prevention collected data during school time, through visual examination in natural daylight, with no dental instruments. Doctors used criteria from theoretical training instances. Cavities lesions were considered caries. Data was analysed with statistics from SPSS-10 package. The error margin for data referring to caries was between 5 to 10%. **Results:** considering the total group, in 6-year-olds the mean deft was 3,7 and DMFT was 0,3 and in 12-year-olds the mean DMFT was 2,3. The average percentage of caries in 6-year-old kids was 74,4% and 70% in 12-year-olds. There were heterogeneous results found in the different provinces: deft: 2,1 to 6,3 and DMFT: 0,1 to 0,7 in 6-year-old kids, and DMFT: 1,2 to 5,6 in 12-year-olds. There were different results found in urban and rural schools, and the difference was mainly observed when comparing public and private schools. We found very low incidence of DMFT in 12-year-olds (< 1.2), in groups from private schools in four Argentine provinces and in one rural school, whereas groups of the same age presented DMFT higher than 4,4 in public schools. Only among private schools of two provinces did we find less than 50% caries incidence among 6-year-olds. **Conclusion:** this study serves as a contribution to the Program for National Prevention and other similar programs and provides a large sample to be monitored and evaluated as part of their studies.

Key words: school-age, dental caries, prevalence, urban, rural, school





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

119

IMMUNOPHENOTYPE OF ORAL METASTASIS IN MEN WITH UNKNOWN PRIMITIVE TUMOR

Villalba L, Cabrini RL, Keszler A

Department of Oral Pathology School of Dentistry, University of Buenos Aires .

lausdrigo@hotmail.com

The diagnosis of metastatic lesions of unknown origin is difficult. Determination of the primary site of the tumor is an important clinical challenge. Histopathology not allowed in most cases differentiate among several possible origins. Using a panel of antibodies on the basis of histomorphological features observed and clinical data, with high probability can indicate the location of the primary tumor. In some cases specific markers allow to make accurate diagnosis. **OBJETIVE:** Define immunophenotype of oral metastases in men with unknown primary tumor to estimate possible origin. **Methods:** Twenty three cases obtained from the files of the Department of Oral Pathology School of Dentistry, University of Buenos Aires, were studied. The clinical data provided on the biopsy forms were evaluated. Histological sections stained with HE were reviewed and new sections were made to the application of immunohistochemical techniques. The initial panel included antibodies anti cytokeratins (AE1-AE3, CK7, CK20) and vimentin. According to their expression, TTF-1 and PSA were then added. Only cases showing greater than 5% tumor cell positivity were regarded as positive. **Results:** The mean age of patients was 61.3 years (43-82). The 56.5% of the lesions were located in gingiva and 43.5% were intraosseous. The presumptive clinical diagnosis was malignant tumor in 56.5% of cases, but in no case was presumed metastases. All metastases were positive for AE1-AE3. Ten cases (43.5%) were CK7-/CK20-, of these 2 cases also expressed PSA+ and vim-, which defines prostatic origin; the rest vim+ and according their histomorphology suggested primary renal. Nine cases (39.1%) were CK7+/CK20-, including 2 cases TTF-1+ and vim-, which defines pulmonary origin. Four cases (17.4%) were CK7+/ CK20+ suggesting by their histomorphology gastrointestinal (2 cases) and bladder (2 cases) origin. **Conclusion:** All metastases were of epithelial origin. The diagnosis was definite in 17% of the cases, approximate in 52% of them, and no definition of origin in the remaining 30%. The diagnosis was definite in 17% of cases, in 52% of them of guidance, and without source definition in the remaining 30%. These results indicate the usefulness of the immunostaining in the orientation primary location. **Key words:** Oral metastasis, immunohistochemistry.

120

LIDOCAINE PROMOTES CELL PROLIFERATION IN HUMAN GINGIVAL FIBROBLASTS

Quinteros Villarruel E, Borda E, Orman B.

Pharmacology Unit, Faculty of Dentistry, University of Buenos Aires and CONICET Buenos Aires, Argentina.

licenciadopol@hotmail.com

INTRODUCTION: Local anesthetics lighten or prevent pain by interrupting nerve conduction by direct inhibition of voltage-dependent Na⁺ channels. **OBJETIVE:** We study the pharmacological ability of lidocaine to modulate human gingival fibroblast cell proliferation and its mechanism. **Methods:** Human gingival fibroblast proliferation was measured using primary culture technique by tritiated thymidine incorporation in the presence of increasing concentrations of lidocaine. To determine the mechanism by which the lidocaine induces cell proliferation, different enzymatic agents were used prior to addition of the local anesthetic. PGE₂ generation and protein kinase C (PKC) activity also was quantified by ELISA. **Results:** We observed that lidocaine concentration response curve (10⁻¹¹M to 10⁻⁷M) promotes cell proliferation process in primary cultures in a dose-dependent manner, the peak was observed with 1x10⁻⁸M lidocaine. The stimulatory effect was blocked in the presence of 1x10⁻⁹M staurosporin, a PKC inhibitor, added prior to the primary culture. Furthermore, the PKC activity was increased significantly (p < 0.0001) in the presence of 1x10⁻⁸M lidocaine. The increase of cell proliferation, on the other hand, augmented the generation of PGE₂. To know the origin of the mobilized calcium promoted by lidocaine in the course of cell proliferation, selective Ca⁺⁺ inhibitors were used, such as BAPTA (5x10⁻⁶M) as extracellular calcium chelator, BAPTA-AM (5x10⁻⁶M) as intracellular calcium chelator, which blocked the stimulatory effect of lidocaine. Moreover, inhibition of calcium-calmodulin complex (W-7 5x10⁻⁶M) produced a decrease in cell proliferation induced by the local anesthetic. **Conclusion:** These results show that lidocaine promotes cell proliferation process in human gingival fibroblast involving PKC participation and the generation of PGE₂ calcium- dependent.

Key words: lidocaine, cell proliferation, protein kinase C





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

121

STUDY OF THE USE OF MEDICATIONS TO PATIENTS ATTENDING TO THE MUNICIPAL DENTAL CENTER OF THE CITY OF CORDOBA.

Virga C, Aguzzi A, Bazaez M, De Leonardi A, De Leonardi G, Mizutamari K.

FACULTAD DE ODONTOLOGIA, UNIVERSIDAD NACIONAL DE CÓRDOBA. adrianadldr@gmail.com

The studies of medicine use allow identifying problems to formulate interventions that facilitate the rational medicine use, which not only also include the health agents but the consumers. **Objective:** To analyze the behavior of medicine consumption of patients who attend a public service of deontology. **Methods:** A qualitative-quantitative study was made, by means of a structured survey to patients of Municipal Dental Center of the city of Cordoba. The data gathered of the surveys were sociodemographic: related age, sex, level of education and to the medicine consumption: type, duration of the treatment, knowledge relative to the use responsible for the medicine (reading of I prospect, date of victory), among others. The statistical analysis was descriptive. **Results:** The total number of consulted patients was of 104 (79% women and 21% men; 57.7% with studies until primary complete and 18.3% with secondary complete). 76.9% consumed medicines during last the 15 days, of which single 21.7% were without medical prescription and 60.8% bought them, 19.6% obtained them from Public Health. 61.5% reviewed the date of victory of medicines. 59.6% read the label or I prospect. The consumed medicines more in agreement with classification ATC-OMS (Anatomical, Therapeutic, Chemical classification system), corresponded to the System Muscle-Skeletal (M: 27.9%), Anti-infective(J: 18.9%), Digestive System and Metabolism (A: 15.3%) and Nervous System (N: 13.5%). 65.4% were consumed during a period of days, 2.9% of weeks and 31.7% of more of a month. **Conclusion:** The sample analyzed in this study presents/displays self-medication LF, a behavior widely extended at world-wide level (around 60%), consistent with the degree of knowledge of use responsible for medicines that are observed. This could be a characteristic of the population that attends deontology attention of the public sector of the city of Cordova that could as well be associate to self-care conduct of. It would be important to confirm this observation to promote it in order to facilitate medicine the rational use of the consumers.

Key words: medicine use, Pharmacovigilance, Consumption of medicine

122

PREVALENCE OF PERIODONTAL DISEASE IN PATIENTS UNDERGOING CARDIAC SURGERY

Romero J, Rama Ubertone R, Grisolia, Briselli V, Grandinetti JA, Brusca MI.

UAI.

mariaisabelbrusca@gmail.com

Objective: To study the prevalence of periodontal disease in patients undergoing cardiac surgery. **Materials:** In the Service of Churruca Hospital , we examined the dental and periodontal status in 30 patients who were to undergo cardiac or vascular surgery, and 30 control group patients attending dental care. We assessed plaque and gingival indices, probing depth, attachment loss, mobility, furcation lesions, bleeding on probing, and serial radiographic periapical both jaws well as the dental. With a sterile swab samples were taken from soft tissue, palate, buccal mucosa and tongue and placed in the middle Stuart. Subgingival samples were taken with paper cones. This led to a test tube with 1 ml of saline solution and another with VMGA III. Were plated on blood agar for anaerobic plates were incubated in anaerobic jar with controlled atmosphere for 7 days at 36 ° C +1 ° C. The samples were cultured in differential chromogenic medium Statistical analysis was performed. We performed Pearson Chi Square **Results:** Sample mucosa was observed Pseudomonas aeruginosa of 10%, 20% Prevotella intermedia sample and Staphylococcus aureus and 5% Porphyromona gingivalis. Once the control population stratification and population being surgery was observed in patients who will undergo surgery is present in 9% of samples of subgingival Candida albicans followed with 13%, with 4% Prevotella intermedia, Staphylococcus aureus with 7% with 4% Porphyromona gingivalis, Prevotella intermedia adhesion of Candida albicans with Porphyromona gingivalis and 2% and 3% percent of the total sample showed no development. This would demonstrate a higher percentage of MO present in Periodontal disease in patients who will undergo surgery and not those of the control group. There is an association between patient type and amount of bacteria in the mucosa and are statistically different at significance level alpha = 0.05 No association between patient type and amount of bacteria in plaque, and are not statistically than the significance level alpha = 0.05 **Conclusion** reach patients with cardiac surgery and periodontal disease periodontal pathogenic microorganisms which could cause complications with systemic dissemination.

Key words: periodontal disease, cardiac disease





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

123

OCCUPATIONAL HAZARD IN DENTISTRY: CARPAL TUNNEL SYNDROME

Hernando LM, Baglini C, Zanetta VH, Insaurralde HR, Forte EI, Stropa GA, Zamar SA.
National University of Córdoba. School of Dentistry. Chair of Legal Dentistry.
luishernando@odo.unc.edu.ar

Objective: To determine the prevalence of carpal tunnel syndrome in professional dentists practicing in the city of Córdoba, to encourage the prevention of this disease and raise awareness about self-care measures. **Method:** The carpal tunnel syndrome (CTS) is the most common entrapment neuropathy. Drift compression of the median nerve at the wrist. It is more common in females 2:1, between 40 and 60 years with another peak around 75 and clear occupational component (Tanaka S, 1994, Bland JD, 2003). Classified as a repetitive motion disorder is manifested in dental professionals due to repeated use to turbine or handpiece. (RM Szabo, 1998). In a population of 3103 dentists validated a survey of analytical type, using a closed-ended questionnaire consisting of questions based on the diagnostic algorithm of this syndrome, self-administered to 150 dentists from 30 to 60 years old, engaged their profession in the city of Córdoba, during the period June 2011 - June 2012. **Results:** Over a n = 150, we determined that 88% of respondents do not recognize this syndrome as professional risk disease, 2% of cases in the range of 55 to 60 years show a decline in the function of the STC right support, while 5.5% in the age range of the sample described asymptomatic periods and intermittent exacerbation of symptoms consistent with CTS. **Conclusion:** The symptoms relieved in this study is not conclusive diagnosis of the syndrome, however warns of the risk of developing it. It should raise awareness among professionals who have symptoms on preventive methods to reduce the risk of future development of Carpal Tunnel Syndrome.

Key words: Carpal tunnel syndrome, Occupational hazard

124

ASSESSING THE QUALITY OF THE SEALING: RADIOGRAPHIC STUDY

Alderete M, Labarta A, Gualtieri A, Corominola P, Martinez P, Ritacco E, Elverdin JC, Fernandez Solari J.
Rodriguez P, Sierra L.
FOUBA. mer_312@hotmail.com.ar

Objective: To evaluate radiographically the quality of seals conducted by graduate students of the School of Specialization in Endodontics (2007-2008) in relation to the apical limit and the degree of condensation in different tooth groups. **Methods:** We analyzed medical records of 1312 patients, over 10 years old, treated in 2007-2008 in FOUBA Graduate Clinic. The samples were divided according to dental group, maxilla or mandible, anterior or posterior sector, condensation technique and sealant used. Data were analyzed using Chi-square test with Yates correction and z test for difference of proportions. **Results:** The percentage of ideal fillings (59%) was significantly higher than the other categories (41%, $p < 0.05$), been considered ideal when the apical limit of obturation coincides with the limit of the surgical preparation and obturation is condensed uniformly. The postoperative radiographic analysis showed a significant association between dental group and sealing categories (Ideal seals, over-seals, over-extensions and sub-seals; shorter, well or wrong condensed) ($p < 0.05$). The rate of restorations in the maxilla (57.5%) was significantly higher than in the lower jaw (42.5%, $p < 0.05$). The percentage of fillings in posterior side (78.7%) significantly exceeded the anterior side (21.3%, $p < 0.05$). There was significant association between the sealing categories and the position ($p < 0.05$). The percentage of well condensed fillings (82.1%) was significantly higher than poorly condensed (17.9%, $p < 0.05$). The percentage of cases where Grossman cement was used (82%) was significantly higher than the percentage of cases where another type of sealant/paste was used (18%, $p < 0.05$, medical records). No significant association was found between the type of sealant/paste and the dental arch. **Conclusion:** The quality of seals radiographically analyzed varied significantly according to dental groups. Based on radiographic evaluation criteria, the ideal limit of the surgical preparation and the degree of homogeneity achieved, the most critical point is evidenced in relation to the apical extension of the sealing, being the anterior dental group (incisors and canines), which showed more cases than not reach a correct apical limit or proper condensation. The results showed that was more difficult to manage the relationship with the ideal limit of the surgical preparation than the degree of condensation achieved.

Key words: epidemiology, apical limit, homogeneity, obturation





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

125

EFFECT OF THE ANDROPAUSE ON BONE TISSUE

Mina NF*, Lewicki M, Mandalunis PM

Department of Histology and Embriology, School of Dentistry, University of Buenos Aires
nataliafmina@hotmail.com

The effects of andropause on bone tissue have been clinically described, but there are not experimental studies in the literature that have evaluated bone loss in experimental animals, therefore, the **aim** of this study was to evaluate the effect of the andropause on bone tissue in Wistar rats. **Methods:** Twelve male Wistar rats of two and a half months of age and weighing 300-320g were divided into two groups: Sham Group and Experimental Group: animals underwent bilateral orchiectomy. After 3 months of experience the animals in both groups were euthanized. Femurs, tibiae and mandibles were resected, fixed, decalcified and histologically processed. Longitudinal sections of tibiae, femur and mesio-distal oriented sections of interradicular bone of the first lower molar were obtained and stained with H&E. On digitalized microphotographs the following histomorphometric parameters were evaluated: Bone Volume (BV/TV)(%) in tibiae, femurs and interradicular bone, and thickness of growth plate cartilage (GPC.Th)(μ m). Data obtained were analyzed statistically using the Student t-test. **Results:** Bone volume (BV/TV)(%) decreased significantly in the subchondral bone of tibia and femur. Tibia: *Sham* 3.3 ± 2.21 , *Experimental* 6.8 ± 2.31 , $p < 0.05$. Femur: *Sham* 16.2 ± 3.31 , *Experimental* 6.8 ± 2.44 , $p < 0.05$. Interradicular bone showed a decreasing, but this difference was not statistically significant, *Sham* 34.7 ± 8.06 , *Experimental*: 27.9 ± 4.27 . No differences were observed in the thickness of growth cartilage between groups. **Conclusion:** The results show that the experimental andropause during 3 months produced a significant osteopenia in the subchondral bone and a decreasing in the interradicular bone volume.

UBACyT 20020090100210.

Key words: andropause, osteopenia, orchiectomy

126

PREVALENCE OF ESTOMATOLOGICAL LESIONS BY AGE, IN TWO SERVICES OF THE DC NUC

*Blanc F, Caciva R, Zapata M, Belardinelli P, Panico R, López de Blanc S.

Department of Oral Pathology. Faculty of Dentistry. National University of Cordoba.
fedeb Blanc7@hotmail.com

Prevalence studies are essential not only to better organize services, but also to improve the prevention implementing new policies on population health. **Objective:** To study the prevalence of lesions in two Stomatological services (A and B) and to analyze the distribution by age. **Methods:** A retrospective study of complete clinical records of patients who attend both services in the period from February 2009 to July 2012. Sex, age and diagnosis of oral lesions according to WHO, and Grinspan et al. criteria, were recorded. Oral mucosal lesions were classified as: immunological diseases (A), infectious (I), pre-cancerous (C), tumoral (TU), traumatic (TR) and other (O). The distribution by decades was recorded and analyzed using the χ^2 test. **Results:** In this study 1373 clinical records were analyzed, being 61% of the patients female and the age range was 1 to 91. The 40% of the patients belonged to the 6th and 7th decade (50-69 years old). From the 1st to the 4th decade TU prevailed. From age 40 onwards the main reason for consultation were the C, most frequent in the 6th and 7th decade $p < 0.0001$. Immunologic diseases and traumatic lesion had similar distribution on every decade. The infectious diseases were more frequent between 40 and 80 years with a peak in the 7th decade, predominantly by fungal diseases. The TU had bimodal distribution with a peak between 10 and 30 years and another at age 60, however through the specific analysis, we could see that the predominant pathologies were different. **Conclusion:** The present study allows us to know the age distribution of the oral lesions treated in two services; and therefore giving us elements to generate prevention policies, especially in regard to the population which are known risk factors. This also is associated with the importance and need for better training of professionals to achieve early diagnosis.

Key words: oral lesions, age distribution





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

127**BONE HISTOMORPHOMETRY IN HEALTHY FEMALE WISTAR RATS OF FIVE DIFFERENT AGES.**

Nenda MM, Lewicki M, Mandalunis PM. Department of Histology and Embryology, Faculty of Dentistry, University of Buenos Aires.
mariamartan@hotmail.com

The animals frequently used for experimental designs related to osteoporosis are female Wistar rats. Given that, is important to know bone changes in different ages, the **objective** is to evaluate histomorphometrically bone volume in subchondral and interradicular bone and thickness of growth plate in female healthy Wistar rats of five different ages. **Methods:** Forty-two female Wistar rats were used and they were euthanized at different time periods. Group I: 6 weeks (childhood), Group II: 10 weeks (prepubertal), Group III: 14 weeks (pubertal), Group IV: 18 weeks (young adults), Group V: 22 weeks (adults). Animals were euthanized and weights were recorded. Tibiae and mandibles were resected and histologically processed to obtain oriented sections from subchondral and interradicular bone. Sections were stained with H&E and on digitalized microphotographs the following histomorphometric parameters were measured: Bone volume (BV/TV) (%) in subchondral and interradicular bone and thickness of growth plate cartilage (GPC.Th)(μ m). Data were statistically analyzed by ANOVA and Bonferroni test. **Results:** *Body weight:* Group I: 137 \pm 12, Group II: 205 \pm 15, Group III: 245 \pm 7.5 Group IV: 268 \pm 14, Group V: 248 \pm 19.2, (p <0.05) between all groups except between groups IIIvsV. *BV/TV (%) tibia:* Group I: 24 \pm 5.7, Group II: 21 \pm 4.7, Group III: 15 \pm 4, Group IV: 21 \pm 4, Group V: 20 \pm 6.1, IvsIII, p <0.05. *BV/TV (%) interradicular bone:* Group I: 36 \pm 5.8, Group II: 45 \pm 6.5, Group III: 50 \pm 6.0, Group IV: 48 \pm 7.9, Grupo V: 44 \pm 4.5, IvsIII and IV, p <0.05. *GPC.Th (μ m):* Group I: 402 \pm 85, Group II: 251 \pm 64, Group III: 185 \pm 12, Group IV: 125 \pm 22, Group V: 124 \pm 15, p <0.05 between all groups except in the groups IIvsIII and IvsV. **Conclusion:** Results showed a lower subchondral bone volume in animals of 14 weeks, while in the interradicular bone the lower bone volume is found at 4 weeks and then increases and maintains. In relation to the cartilage plate thickness decreases until 18 weeks of age. These results should be taken into account when experimental models in female Wistar rats to evaluate bone histomorphometry are designed. UBACyT 20020090100210.

Key words: female Wistar rats, bone histomorphometry, experimental design

128**DEVELOPMENT OF ENTEROCOCCUS FAECALIS BIOFILM AND ITS SUSCEPTIBILITY TO SOME IRRIGATING SOLUTIONS EXAMINED BY SEM**

Galván L, Cheein E, Gaudioso C, Cangemi R, Bulacio MA. Schhol of Dentistry. Faculty of Biochemistry, Chemistry and Pharmacy. National University of Tucumán. maritabulacio@hotmail.com

Aim of this study was to a) show biofilm development of *E. faecalis* b) to evaluate the action of irrigating solutions on the biofilm by scanning electron microscopy (SEM) and identifying bacterial colony forming units (CFU) after the action irrigating solutions. **Methods.** a) 20 pieces tooth roots were incubated with *E. faecalis* during 30 days. 4 pieces were removed at the experimental time: 48 hours, 4, 7, 14 and 30 days and observed by SEM. b) 36 discs tooth roots were incubated with *E. faecalis* for 14 days and were divided in six groups, irrigant used 5 min: group 1(n = 6): sodium hypochlorite (NaOCl) 1%, group 2(n = 6): NaOCl 2.5%, group 3(n = 6): chlorhexidine gluconate (CHX) 1%, group 4(n = 6): 2% CHX, group 5(n = 6): Iodine Potassium Iodide (IKI) 0.3 % and group 6(n = 6): distilled water (control). Pieces (n = 3) of each group were observed by SEM according Estrela et al. 2009. The other half of each group were incubated in sterile culture medium and CFU counts performed at 24 and 48 hours. **Results:** a) was confirmed by SEM biofilm formation after 14 days. b) with 1% and 2.5% NaOCl was not detected biofilm, with CHX 1% and 2% were observed few areas colonized with invasion of dentinal tubules (grade 2) with 0.3% IKI were observed most areas with invasion of dentinal tubules (grade 3), in the control group were observed all areas covered and the dentinal tubules (grade 4). CFU results: 1% NaOCl 24h. no growth, 48h. (14 X 10²) 2.5% NaOCl no growth at 24 and 48 h. 1% CHX 24h. no growth, 48 h. 18x10⁴. CHX 2% 24h. without growth, 48hs. 24x10². IKI 0.3% at 24 h. 12x10⁸ growth. Distilled water 24 h. 23x10⁸ **Conclusion.** SEM biofilm of *E. faecalis* showed susceptibility to 2.5% NaOCl. 1% NaOCl. CHX 1% and 2% were less effective, while IKI and distilled water (control) no showed effectivity. CFU by 2.5% NaOCl no development until 48 h. while the others solutions and control showed bacterial growth at 48 h. Partially subsidized CIUNT.

Key words: SEM, E. faecalis, biofilm





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

129

RADIOGRAPHIC EVALUATION FRONT AND SIDE VIEW OF ROOT CANAL OBTURATIONS IN EX VIVO
*Cheein E, Galván L, Galván A, Atlas D, Bulacio MA Schhol of Dentistry. Faculty of Biochemistry, Chemistry and Pharmacy. National University of Tucumán.
maritabulacio@hotmail.com

Many endodontic failures may be due to deficient root obturations by poor seals in complex anatomy. The **aim** of this study was to evaluate radiographically the front and side of the quality of obturations in the three thirds of the root canal, in ex-vivo teeth of circular and oval, sealed with lateral condensation technique performed by undergraduates. **Methods.** We selected 50 of upper central incisors and 50 canines circular upper oval section, ex vivo, sealed on Endodontics students 5th year of the Faculty of Dentistry. Radiographs were taken of front and profile which photography camera were digitized with Nikon D 3100 (Japan) standardizing the focus-object distance. The images were magnified and evaluated in the three thirds applying the classification of Kersten et al. (1987). The data were statistically analyzed with the chi-square test. **Results.** In circular section incisors were no significant differences in coronary thirds ($p = 0.005$) and medium ($p = 0.024$), being greatest suitable fillings in the front view, while the profile were higher imperfect seals, no significant differences in the apical third. In canine oval section significant differences in the coronal third ($p = 0.0004$) and medium ($p = 0.0013$) being higher suitable fillings in the front view, while higher profile were imperfect and inadequate seals. In the apical third were significantly higher imperfect seals ($p = 0.033$) in the profile view. **Conclusion.** The front radiographic image in all cases showed better quality of the seals in the profile view. In oval duct seals are inadequate seals observed higher than those in circular ducts, conduits may infer that in the embodiment of oval lateral condensation technique is most difficult. Partially subsidized by CIUNT.

Key words: radiography. root canal obturation

130

MICROANALYSIS OF THE INORGANIC COMPONENTS OF HEALTHY ENAMEL AND ENAMEL WITH CERVICAL LESIONS. Lutri P, Francia C, Valentinuzzi M, Busleiman F, Gimenez M Sezín M, Spadiliero de Lutri M. Faculty of Dentistry and Faculty of Mathematics, Astronomy and Physics. National University of Córdoba, Argentina. paolalutri@hotmail.com

Objective: Evaluate enamel inorganic components, using microanalysis with electron probe in healthy areas and cariosas and non cariosas lesions (CNCL). **Methods:** 20 teeth were divided into Group 1: healthy, group 2: white spot, group 3: abrasion, and, group 4: erosion. Teeth were cut in mesio-distal direction with microtome. They were polished and washed with ultrasound and they kept in the oven at 37 degrees for 24 hours. The electron probe (EPMA) leaves 200 seconds at every point along 500 μ m, to assess the concentrations of P, O, Na, Mg, and Ca. Kruskal Wallis test was used. **Results:** a) *Phosphorus*: neither groups 2 and 3 there were no significant differences, neither between 4 and 1, however there were differences when compared the first two with the second. The highest value p obtained was in healthy enamel, erosion, abrasion and white spot. b) *Oxygen*: between group 1 and 3 there were no significant differences, however there them between 2 and the previous two. Group 4 showed differences with the other three. The highest value of O found was in white spot, erosion, abrasion and healthy tooth. c) *Sodium*: between group 1 and 3 there was no significant difference, nor between group 4 and 2. There were differences between the first two and the second two. The highest value of Na was obtained in white spot, erosion, abrasion and healthy tooth. d) *Magnesium*: there were no significant differences between group 1 and 2, but there was observed stadistical significance between the first and 3 and 4 groups. The highest value of Mg was obtained in white spot, healthy tooth, erosion, and the minor in abrasion. e) *Calcium*: there was no stadistical significance between group 1 and 3. There were stadistical differences between the 4 and the other three groups and between group 1 and the rest of the groups. The highest value of Ca was obtained in abrasion and healthy tooth followed by white spot and erosion. **Conclusion:** Changes could be established in the percentage of enamel inorganic components in healthy teeth and enamel with cervical lesions.

Keywords: cervical lesions, healthy enamel, inorganic components





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

131

EVALUATION OF THE PROCESS FOR ADOPTION OF THERAPEUTIC OF GUIDED TISSUE REGENACIÓN.

Steeman, R.(h); Reynoso, A.C.; Steeman, F.; Sica, M.; Lapalma, M. A.
Universidad Nacional de Rosario. alelapalma@hotmail.com

Objetivo: To evaluate the processes of adoption of guided tissue regeneration to solve the problems of bones and recovery peri-implant soft tissues in both prosthetic values (white aesthetic parameters) and the mucogingival (pink aesthetic parameters). **Methods:** We used Rogger theory that considers five attributes for a new technology was implemented. The instrument used was a survey of seven closed-ended questions and Likert scale, with an explanation of each attribute. The study population was thirty dentists' faculty and / or graduate students. Descriptive statistics were used for analysis and information processing. The first attribute considered was the relative advantage, the second, the possibility of observation before implementing interventions, the third, the compatibility, the fourth complexity. The fifth, the possibility of testing. **Results:** 33% of respondents not using guided tissue regeneration. 70% of those using this technology undesirable effects were uncommon (first attribute), the second attribute, 60% needed to see before implementing various interventions, the third attribute, only 35% accepted it quickly, the fourth, the 65% found it difficult. The fifth, only 5% felt that there was sufficient proof. **Conclusion:** The adoption of this technique requires acquire and strengthen the skills and is recognized as an effective treatment. This survey instrument of information is justified as an area highly dynamic discipline regarding technological developments and planning required in undergraduate and graduate education.

Key words: Evaluation adoption therapeutic guided tissue regeneration.

132

INSTITUTIONAL DENTAL SERVICES: STUDY OF FREQUENCY OF PERFORMANCE

Steeman, R.L. (h).; Lapalma, M.A.; Sánchez, H.; Reviglionio, M.; Reynoso, A.C.
Universidad Nacional de Rosario.
alelapalma@hotmail.com

Objetivo: To characterize the performance of three dental effectors from the study of information systems of records. **Methods:** We studied three institutions, the Liceo Militar Aviation (LAM), the Hospital Dental Service Provincial (SOHP) of Rosario and Social Work Shoe (OSC). Descriptive statistics and calculated the percentage distribution of services provided in each. These studies were part of the practice of epidemiology graduate students of specialization and expertise in prosthodontics. **Results:** In the studied 50 SOHP benefits: emergency visits: 26% (pain): surgical (18%), endodontics (6%), periodontics (6%), extraction (30%) and prosthodontics (14%). In the 680 CSO performance were observed between 2009 and 2010: consultations (10%) emergency consultation (2%), surgical (35%), endodontics (11%), periodontics (12%), extraction (7%) and prosthodontics (23%). In 2148 LAM were recorded between 2007 and 2011 performance: consultations (41%), surgical (17%), endodontics (5%), periodontics (9%), extraction (4%), prosthodontics (6%) and radiographs (18%). The information provided by these effectors agree predominantly welfare profile, more suitable for the quantitative evaluation of the benefit for qualitative assessment. No relevance contextual data to help plan oral health promotion, public sector compounded by the possibility of loss of contact with the patient and the obligatory remote control. **Conclusion:** The percentage distribution shows higher frequency of emergency and effector extractions in public. In the OSC operative predominates followed by prosthodontics. The LAM was higher frequency of consultations followed by the operation. We interpret these data from the Hospital treats emergency preferably, the LAM, consultation and OSC, which is more comprehensive interventions provides dental health. The characterization of these three effectors demand shows the need for planning and design of health policies to increase benefits in health status and reduce emergencies.

Keywords: Institutional dental services: study frequency performance.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

133

REMINERALIZATION OF THE TOOTH ENAMEL ARTIFICIALLY DESMINERALIZED

Cano, Verónica.

Faculty of Dentistry. National University of Córdoba, Argentina.

verocano01@hotmail.com

For years it was believed that decay was synonymous with cavity. Currently, it is considered that the "dental disease" represents a constant imbalance in the oral cavity generated by the joint action of multiple etiological factors. This imbalance can be halted or reversed in two ways: biologically or with therapeutic treatment. **Objective:** The aim of this study was to quantitatively evaluate, through the weight gain, the degree and remineralizing ability of four different products: 1- fluoride varnish, 2- milk with high content of casein and calcium, 3- casein phosphopeptides (CPP) / amorphous calcium phosphate (ACP) and 4- the combination of a sodium fluoride solution with an acid pH with the subsequent application of CPP / ACP; in white spot lesions artificially produced. **Methods:** 55 Healthy extracted human teeth were selected, cut into blocks and the samples obtained (n= 140), were subjected to a demineralization process in a standardized surface. Samples were distributed in five groups, four of which were submitted to different treatments, and a control group was kept in artificial saliva. Samples were weighted before and after demineralization, and after completion of the remineralizing treatments. **Results:** Results were statistically evaluated by ANOVA test, which determined that the average values were different ($F = 2.925 E +01$). All the treatments applied resulted in an increase of weight being the fluoride varnish the one doing it in greater magnitude, followed by CPP-ACP treatment. In third place, the treatment with a topical solution sodium fluoride and acidulated phosphate and CPP-ACP. The treatment with milk containing a high content of calcium and casein showed the lowest increase of weight of the four treatments analyzed. **Conclusion:** While under the experimental conditions of this in vitro study all the treatments applied have generated a positive response, milk with a high content of calcium and casein produced less increase in weight.

Key words: Remineralization, Fluoride, Casein

134

CARBONIC ANHYDRASE IX EXPRESSION IN POTENTIALLY MALIGNANT DISORDERS OF ORAL MUCOSA

Pérez MA, Masquijo Bisio P, Keszler A, Itoiz ME

Facultad de Odontología - U.B.A. valemigue@tutopia.com

Carbonic Anhydrases (CA) include a group of 16 isoenzymes which catalyze the reversible conversion of carbon dioxide to bicarbonate: $CO_2 + H_2O \rightarrow HCO_3^- + H^+$. Its cellular expression is related to hypoxic situations. Among CAs, carbonic anhydrase IX (CAIX) is localized in cellular membranes. Normal tissues do not express CA IX with the exception of gastrointestinal epithelia, pancreas, gallbladder and liver. Overexpression of CAIX has been detected in a variety of solid tumors, including squamous cell carcinomas of head and neck. Overexpression has been also described in premalignant lesions of cervix and lung. However, data of the enzyme expression in potentially malignant lesions of oral mucosa could not be found in the literature. **Objective:** to search for CAIX expression in biopsies of lichen and leukoplakia lesions of human oral mucosa. **Methods:** Biopsy specimens of lichen (10 cases) and leukoplakia (10 cases) from the archive of Surgical Pathology Laboratory at the Oral Pathology Department were analysed. Five specimens of histologically normal mucosa taken during surgery for deep-seated lesions were included as controls. Samples had been fixed in formalin-PBS (pH 7.0) and embedded in paraffin. Immunohistochemical detection of CAIX were performed using a rabbit polyclonal antibody (Santa Cruz Biotechnology) and the biotin-streptavidine-peroxidase kit (Kit Multilink; Biogenex). **Results:** Normal mucosa samples were negative or weakly positive. Lichen samples showed a cell membrane reaction in the basal third of epithelium. On the contrary, leukoplakia expression was mainly cytoplasmic and more intense in the upper epithelial layers (with the exception of corneal layer which were completely negative). **Conclusion:** To our knowledge, this is the first description of CAIX expression in oral potentially malignant lesions. Enzyme overexpression was found in pathologic epithelia. Lichen and leukoplakia lesions showed different patterns of reaction, probably related with a greater hypoxia in the basal strata of lichen epithelia. Grant: Prog. UBACyT 2011-2014

Keywords: carbonic anhydrase IX- human oral mucosa- potentially malignant lesions





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

135

L-FORMS OF BACTERIA IN HUMAN PERIODONTOPATHIC AND CARIOGENIC BIOFILMS.

Palacios N1; Turcot L1; Bernat M1; Vilotta SM1; Molgatini S1; Rosmino M.F1; Giménez D2; Dominguez SA3; Reynoso-Peitsch P3, Somaglia L1. 1 Department of Microbiology and Parasitology. Faculty of Dentistry. UBA, 2 CITEFA, 3 CNEA.. nppalacios@yahoo.com.ar

The L-forms are wall cell deficient bacteria - antimicrobial inducible. However, our findings of morphological atypia in subgingival plaque from patients with unmedicated chronic periodontitis, would suggest that these abnormalities are evolving and / or survival forms in adverse environments. These phenotypic variants (ignored in diagnostic protocols) would be responsible for the persistence, latency, recurrence and / or refractoriness to treatment of dento-periodontal disease. **Objective:** Detect by SEM L-forms in cultures of 4 bacterial species isolated from periodontopathic (P.Bf.) and cariogenic (C.Bf.) biofilms. **Methods:** It was analyzed by SEM cultures of *A. actinomycetemcomitans* and *Mycoplasma spp.* (P.Bf.) and *S. mutans* and *S. sanguinis* (C.Bf.) developed each, over 20 nitinol surfaces. It was defined as L- Form to pleomorphic structures that can grow : syncytia, body-L, sphero-protoplasts and / or nanometric filterable forms. **Results:** All species studied demonstrated the ability to develop one or more phenotypic variants of L-forms. Each L-form was different for each species. Due to the limited sample it could not be assessed whether the variations are specie specific. **Conclusion:** Recognition by SEM from nanometric to syncytia forms (Nanoidentification), has been an original finding for the studied bacteria and opens a new field of research applicable in cariology and periodontics. Their ability to survive in immune system cells, to cross the blood-brain and placental barriers and to vehiculize by bacteremia from dentogingival biofilm makes the sick cario-periodontal in a high risk patient of systemic complications. L- bodies and syncytia (and based on the theory of Provolution) could be niche of genetic recombination and new phylotypes origin of oral bacteria. Further study is needed to confirm these hypotheses and understand the relevance of these variants in the pathogenesis, diagnosis, treatment and pronostic of human and veterinary dento-periodontal disease.

Key words: L-forms , Nanoidentification, Periodontitis

136

ANALYSIS OF STERILIZATION PROCESS IN DENTISTS OFFICES NON INSTITUTIONALIZED.

PALACIOS NP*, BRUSCA MI, SB PEREZ, TEJERINA DP, MOSCA CO, MOLGATINI SL.
Department of Microbiology. School of Dentistry. University of Buenos Aires.
nppalacios@yahoo.com.ar

Objective: To assess compliance with biosafety standards for recovery and sterilization of instruments by dentists offices non institutionalized. **Methods:** In the Service of Biological Control, Faculty of Dentistry, University of Buenos Aires were offered 492 surveys (self-completion questionnaire) the non-institutionalized clinics dentists who applied biological control for its sterilization equipment since April2010 to August 2012. The data were gathered in two groups: Stove (S) and Autoclave (A) and, in each evaluated the instrumental conditioning type, age of sterilization equipment, the operation of the equipment and process control sterilization. Statistical analysis was performed (Mann-Whitney and Kruskal-Wallis). **Results:** The instrumental conditioning unidosis was recorded as the method of choice in both groups (S = 49%, A = 64%). The method of dry heat sterilization stove was the highest percentage (62%). The age of sterilization equipment mediate category of > 10 years in both groups (E = 55%, A = 38%). The registered Autoclaves are mostly manual operation (65%) and heaters, automatic (53%). Most performs control of the sterilization process is carried out by biological control (S= 77% A = 28%) and physical control (E = 65% A = 59%). Most dentists made biological control every 3 months (S = 19%, A = 29%). Biological control records obtained in the study period were mostly negative (E = 92%, A = 94%). **Conclusion:** The regulations set by WHO for instrument sterilization procedures sporicidal and prion level and monitoring have not been met satisfactorily in dental non institutionalized.

Keywords: sterilization proces, biological control, biosafety





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

137 ADHESION OF AGGREGATIBACTER ACTINOMYCETEMCOMITANS TO NITINOL BIOCOMPATIBLE SURFACES.

Vilotta SM, Bernat MI, Somaglia L, Palacios N, Rosmino MF*, Molgatini S, Turcot L. Department of Microbiology and Parasitology. Faculty of Dentistry. University of Buenos Aires. flor_ros@hotmail.com

Gingival-periodontal diseases are multifactorial infectious whose dental plaque biofilm is the main etiologic agent, which store a wide variety of microorganisms. The *Aggregatibacter actinomycetemcomitans* is a gramnegative bacteria present in this structure and involved in the pathogenesis of periodontitis. Somaglia et al, determined the ability to modify biochemical-clinical indicators of cholesterol "in vitro" by the *Aggregatibacter actinomycetemcomitans*, suggesting the hypothesis that this microorganism captures and fixes the circulating cholesterol on the inner walls of blood vessels. Resident microorganisms in dental plaque can access to bloodstream by dental procedures and be involved in cardiac prosthetic infection resulting in his subsequent replacement. Nitinol is a material used in the manufacture specially cardiovascular prostheses. **Objective:** To study by scanning electron microscopy (SEM) the adhesion and colonization ability of *Aggregatibacter actinomycetemcomitans* to surfaces of nitinol. **Methods:** The *Aggregatibacter actinomycetemcomitans* strain used was isolated from subgingival plaque of a site with chronic periodontitis. Each one of the 50 samples of nitinol was suspended in sterile Tryptycase soy broth supplemented with bacitracin and vancomycin, inoculated with a suspension of *Aggregatibacter actinomycetemcomitans*, and incubated in an atmosphere of 90% H₂ and 10% CO₂ at 37°C. for 5 and 10 days in groups of 25 samples for each time studied. After these intervals the samples were washed three times with sterile distilled water and processed for SEM observation. **Results:** The SEM observations showed that *Aggregatibacter actinomycetemcomitans* developed on the surfaces of nitinol in all the samples studied. The calculation of the corresponding interval with 95% confidence from a binomial distribution, estimates a lower limit to the percentage of positive cases in the population of 92.80% for the case of n = 50. **Conclusion:** According to results obtained *Aggregatibacter actinomycetemcomitans* is able to adhere and colonize surfaces of nitinol. UBACyT Grant 20020090200489.

Key words: *Aggregatibacter actinomycetemcomitans*, nitinol, periodontitis.

138 PRESENCE OF THE GENUS MYCOPLASMA IN DENTAL PLAQUE BIOFILM IN PATIENTS WITH NORMAL AND PATHOLOGICAL CHOLESTEROL LEVELS.

Vilotta SM *, Somaglia L, Bernat MI, Palacios N, Rosmino MF, Molgatini S, Turcot L. Department of Microbiology and Parasitology. Faculty of Dentistry. University of Buenos Aires. stellavilotta@hotmail.com

Mycoplasma are part of the microbiota of the oral cavity, wich have been isolated from gingival sulci in individual with healthy gums and periodontal pockets in patients with periodontitis. Crespo et al. determined the prevalence of *Mycoplasma salivarium* in dental plaque biofilms associated with periodontal disease and its adherence to dental surfaces. The *Mycoplasma* require cholesterol as an essential nutrient, which incorporates as structural strength factor to its cytoplasmic membrane. Serum cholesterol may have ecological influence as a determinant in the development of this microorganism on the periodontal ecosystem. **Objective:** To determine the prevalence of the genus *Mycoplasma* in supragingival and subgingival plaque of periodontally healthy patients with plasma cholesterol levels above and below of 200mg/dl. **Methods:** The studied sample consisted of 50 supragingival and 50 subgingival plaques from periodontally healthy individuals with cholesterolemia values below 200mg/dl and 50 supragingival and 50 subgingival plaques from periodontally healthy individuals with cholesterolemia values greater than 200mg/dl. For isolation of *Mycoplasma spp.* the samples were cultured in PPLO broth and agar supplemented with horse serum and yeast extract. **Results:** The isolations of *Mycoplasma spp.* in supragingival and subgingival plaque samples from individuals with cholesterol values below 200 mg. / dl. were negative and in individuals with cholesterol values above 200 mg. / dl. was isolated *Mycoplasma spp.* in 4 supragingival plaque samples (8%) and in 4 of subgingival plaque (8%). **Conclusion:** In this preliminary study it was found that hypercholesterolemic patients have a higher prevalence of periodontal infection by *Mycoplasma*. Grant UBACyT 20020090200489.

Keywords: *Mycoplasma*, cholesterol, dental plaque





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

139

MYCOPLASMAL BIOFILM FORMATION ON BIOCOMPATIBLE SURFACES OF NITINOL IN THE PRESENCE OF HUMAN SERUM.

Vilotta SM, Somaglia L, Bernat MI, Palacios N, Rosmino MF, Molgatini S, Turcot L. Department of Microbiology and Parasitology. Faculty of Dentistry. University of Buenos Aires. stellavilotta@hotmail.com

The dental plaque biofilm is a reservoir of microorganisms that through bacteremia has access to heart prosthetic surfaces, which can become secondary septic foci in patients at risk.

Previous studies have demonstrated the presence of the genus *Mycoplasma* in gingivo- periodontal plaque and its adhesion to nitinol surfaces, a material used in metal heart devices and prosthetic replacement.

The human serum would act as a source of cholesterol that would facilitate the colonization of *Mycoplasma* in prosthetic devices. **Objective:** To study the adhesion capability of the genus *Mycoplasma* to nitinol surface in the presence of human serum by scanning electron microscopy (SEM). **Methods:** The strain of *Mycoplasma spp.* was isolated from subgingival plaque of patient with chronic periodontitis. 30 nitinol surfaces were suspended individually in sterile PPLO broth supplemented with 20% human serum at levels above 200 mg / dl. of cholesterol and 30 with values less than 200 mg. / dl. of cholesterol, inoculated with a suspension of *Mycoplasma spp.* and incubated in an atmosphere of 90% H₂ and 10% CO₂ at 37°C. for 5 days. After that period the samples were washed three times with sterile distilled water and processed for SEM observation. The control consisted of suspended nitinol surfaces in sterile PPLO broth supplemented with 20% horse serum inoculated with a suspension of *Mycoplasma spp.* The calculation of the corresponding interval with 95% confidence from a binomial distribution permit to estimate a lower limit for the percentage of positive cases in the population of 94.00% for the case of n = 60. **Results:** The SEM showed that in all the samples studied the *Mycoplasma spp.* adhered to the surfaces of nitinol forming a biofilm. Mostly *Mycoplasma* were observed in reproductive state with filamentous and coccoidal forms. **Conclusion:** As set out above it is concluded that the genus *Mycoplasma* adheres to surfaces of nitinol in the presence of human serum forming a biofilm characterized by the predominance of reproductive forms.

Grant UBACyT 20020090200489

Key words: Mycoplasma, nitinol, human serum

140

DISINFECTION OF GUTTA PERCHA CONES WITH IRRIGATING SOLUTIONS AND OBSERVATION OF THE SURFACE TO MEB.

Erimbaue M1, Bottcher S1, Gaudioso C2, Jaime Salloum L3, Bulacio MA1. 1Facultad de Odontología. 2Facultad de Bioquímica Química y Farmacia. Universidad Nacional de Tucumán. Argentina. 3Universidad Privada Antenor Orrego, Trujillo, Perú. martaerimbaue@hotmail.com

Gutta percha cones are widely used for root canal obturation. Although previously expended are decontaminated, this can become contaminated by use, from aerosols generated near the desk and during storage. **Objective.** The aim of this in vitro study was a) to assess the antimicrobial effect of various irrigation solutions for disinfecting contaminated gutta percha cones with *E. faecalis* isolates of root canals and b) observing the scanning electron microscope (SEM) cone surfaces after 1 minute of exposure under the same irrigating solutions. **Methods.** a) 48 percha cones for 1 hour were contaminated with *E. faecalis* isolated from root canals. They were then immersed in the following irrigating solutions: 1% NaOCl, 2.5% NaOCl, CHX 1% CHX 2%, 3% IKI, distilled water (control) for 1 to 3 minutes. Cones were washed and placed individually in BHI medium and incubated for 24 h. observed after that time if there was bacterial growth. b) 48 gutta percha cones were immersed for 1 minute in the same irrigating solutions, then dried and processed to be observed by SEM. **Results.** No bacterial growth was observed with any experimental solution, detecting only growth in the control solution. No defects were observed in the SEM surface texture percha cones immersed for 1 minute in the irrigating solutions. **Conclusion.** With our experimental solutions was 1 minute sufficient to disinfect gutta percha cones contaminated with *E. faecalis* for 1 hour. On the surface of the gutta-percha cones no abnormalities in the texture with the scanning electron microscope (SEM) were observed. Partly subsidized CIUNT

Keywords: irrigating solutions, gutta percha cones, SEM





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

141

ASSOCIATION BETWEEN NUTRITIONAL STATUS, CANDIDAL CARRIAGE, AND PRESENCE OF CARIES IN PREECHOOLERS. Rodríguez Pc Mateo, MTa, Iglesias Vb, Manto MCa, Friedman Sc, Argentieri Ab, *Levin Ba, Molgatini Sa. aDepartments of Microbiology and Parasitology, bPreventive Dentistry, and cGeneral and Oral Biochemistry. School of Dentistry. University of Buenos Aires. claratorrejon@yahoo.com.ar

Candida spp is a frequent commensal yeast of the oral microbiota. However, predisposition of the host intervenes as a co-factor in the genesis of oral candidiasis. In the pediatric population, there are also local and systemic predisposing factors, such as the presence of caries, poor oral hygiene, and nutritional alterations, among others, which influence progression of the disease. **Objective:** To determine the association between nutritional status, *Candida spp* carriage, and the presence of caries in a group of preschool children. **Methods:** The study population comprised 55 children aged 3 to 6 years, attending Kindergartens in La Matanza district (Province of Buenos Aires). Anthropometric parameters, body mass index (BMI), presence/absence of caries lesions, and *Candida spp* carriage in the dental plaque and oral mucosa, were determined. In order to perform microbiological studies, oral mucosa and dental plaque samples were collected and seeded in selective medium CHROMagar Candida®. Fisher's test was used for statistical analysis. **Results:** *Candida spp* strains were isolated from mucosa and dental plaque samples of 34.53% (19 patients) of total processed samples. Twenty-eight patients (50.90%) had no caries; *Candida spp* was isolated from 2 dental plaque (7.14%) and 3 mucosa (10.71%) samples of these patients. Twenty-seven patients had caries (49.09%) and *Candida spp* was isolated from 62.96% of their dental plaque and 59.25% of their mucosa samples (17/16 patients). Comparison of the presence of *Candida spp* in children with adequate nutritional status and overweight and/or obese children showed significant differences regarding the degree of colonization in both mucosa and dental plaque (Fisher's test; mucosa: $p=0.0177$ and dental plaque: $p=0.0418$) **Conclusion:** Colonization of oral mucosa and dental plaque biofilm by *Candida spp* is related with the presence of caries and nutritional status of preschoolers. Grant UBACyT CO02

Key words: *Candida spp*, caries, nutritional status

142

IS THE CYTOTOXICITY OF TITANIUM-DIOXIDE NANOPARTICLES ROS-DEPENDENT?

Bruno ME^{1,2}, Olmedo DG^{2,3}, Sittner M1, Cabrini RL^{2,4}, Guglielmotti MB^{2,3}, Tasat DR1
Esc. de Ciencia y Tecnología, UNSAM1; Cát. de Anatomía Patológica, FOUBA2; CONICET3, CNEA4.
marcosebruno@gmail.com

As a result of corrosion processes, titanium dioxide micro (MPs) and nanoparticles (NPs) can be released from the metal surface into the implant bioenvironment. These particles can deposit locally in the peri-implant tissue, disseminate systemically, or be phagocytosed by macrophages. Transition metals, like Ti, are considered reactive oxygen species (ROS)-producing agents. In the last decade, the risk of prolonged exposure to low doses of toxic particles has been re-examined. In this regard, titanium implants could be considered devices that are capable of releasing small quantities of particles constantly over time. **Objective:** To evaluate *in vitro* the effect of antioxidants on generation of ROS in TiO₂-NPs-exposed alveolar macrophages (AM), to determine the involvement of ROS in cell damage. **Methods:** Macrophages from Wistar rats were cultured (24 hs) and exposed to 10-100µg/ml of TiO₂-NPs. Generation of ROS was assessed using the NBT test, with and without N-acetyl cystein (NAC) and apocynin (APO). Cytotoxicity was analyzed by cell count and total protein concentration. **Results:** ROS generation increased significantly in a dose-dependent manner in TiO₂-NPs-exposed cultures. NAC maintained TiO₂-NPs 10µg/ml-induced ROS generation at baseline levels and decreased TiO₂-NPs 50µg/ml-induced ROS generation by 30%. Likewise, APO decreased ROS generation in cultures exposed to TiO₂-NPs. The number of remaining cells and total protein concentration decreased in TiO₂-NPs-exposed cultures. Conversely, exposed cultures treated with NAC showed higher values compared to TiO₂-NPs. **Conclusion:** TiO₂-NPs-induced ROS generation can be decreased by using antioxidants such as NAC and APO, which suggests that the observed cytotoxicity is ROS-dependent. PICT2008 1116ANPCyT, UBACyT20020100200157 and CONICET-PIP11220090100117.

Keywords: Implants. Titanium, corrosion, macrophages





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

143

BIOLOGICAL FACTORS INDUCING THE REPAIR: PLATELET-RICH PLASMA (PRP) ON THE WOUND PULP.

Boetto AC, Crosa M. Department of Endodontology, Faculty of Dentistry. National University of Cordoba, Argentina. ceciliaboetto@outlook.com

Molecular biology provides new strategies for the treatment of a wide range of pathologies. The agents used to stimulate dentinogenesis can be categorized as biological and non-biological. There are no published data regarding the application of platelet-rich plasma (PRP) containing multiple growth factors on pulp tissue. The **aim** of this research was to study whether the growth factors contained in PRP are capable of promoting dentinogenesis. The young adult dogs used in this research work were anesthetized with sodium pentobarbital 20mg/kg body weight. The 72 tooth elements from the anterior sector were isolated, while the cameral pulp was exposed. PRP of gelatinous consistency was applied to the pulp cavity and the remaining cavity was sealed with glass-ionomer. The dental elements were extracted within periods of 10, 30, and 60 days, post treatment. Such elements were treated according to the method of inclusion in paraffin and then applied the HE staining and the Masson technique. Some semi-sections were obtained serially, from 4 to 5mm thick. These sections were observed, analyzed and photographed with a high-resolution microscope (Olympus BX 50). After 10 days the odontoblast layer showed destruction at the site of the access opening and the sealing material. In the area close to that which had been treated with PRP there was a normal central pulp with abundant vessels. After 30 days some inflammatory infiltrate could be observed in the exposed cameral pulp. After 60 days the predentin showed an irregular profile due to the abundance of calcoferites. Disorganization of the odontoblast layer still persisted as well as the atypical predentin and the dentin with large dentinal tubules. The absence of reparative dentine is likely to occur as a result from the fact that the pulp's response capacity is determined by the molecular characteristics of the receptor. Further studies are needed to be able to define the action of these agents on the mature odontoblasts.

Keywords: platelet-rich plasma, dentinogenesis.

144

EVALUATION OF THE IMPLEMENTATION OF INFECTION CONTROL PROTOCOLS.

Kummer M.C., Granillo B. A.
Microbiology and Parasitology Dept.. Fac. of Dentistry. National University of Tucuman. Argentina.
celestekummer@hotmail.com

In most health care institutions, there is misinformation and little practice of the basic measures to prevent cross-infection, by professionals and assistants. The **aim** of this study was to evaluate, in a private dental clinic, knowledge and application of the standards of infection control in professionals and attendees before, and after a training course making diagnosis of the microbiological contamination of the air and surfaces. **Methods:** we trained the staff and made protocols. Air and surfaces samples were taken at three different times: (1) Before the training and development of protocols. (2) At 2 months, and (3) at 4 months after the implementation of the protocols. To evaluate contamination of surfaces was chosen: working tables and triple syringe tip. Samples were taken with 3M Quick Swab embedded in Lethen broth. After homogenization, were plated on 3M Petrifilm AC for total aerobic count, incubated at 37 ° C for 48 h. Then we count CFU (Colony Forming Units). To evaluate air microbiological contamination we used the technique of natural impaction opened Petri plates with Columbia Agar supplemented with 5% defibrinated blood. Then incubated at 37 ° for 48 hours. and CFU were counted. For analysis of the data obtained was applied Cuzick trend Test. **Results:** The count of CFU on surfaces tables was: (1) 11 CFU (2) 1 CFU and (3) 0 CFU. In Triple syringe tip: (1) 10 CFU and (2) and (3) 0 CFU. In air samples: (1) 57 CFU (2) 23 CFU and (3) 22 CFU. **Conclusion:** The application of protocols reduced 100% the surface contamination and 61.5% the air one. This demonstrates the importance of training and implementation of infection control protocols in dental clinics. Work supported by the CIUNT.

Keywords: infection control, bioaerosol contamination, biosafety.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

145

AGE AND FREQUENCY ISTHMUSES IN MESIAL CANALS OF MANDIBULAR FIRST MOLARS

Gani O., Visvisián C., de Caso C., Boiero C., Ulfohn S.

Department of Endodontics. Faculty of Dentistry. U. N. Cordoba. Argentina.
cndecaso@gmail.com

An isthmus is defined as a narrow, ribbon-shaped communication that connects two or more root canals. Most authors consider these isthmuses as a more anatomic aspect and very few relate them to age. **Objective:** To analyze the influence of age on the prevalence of isthmuses in mesial canals of permanent mandibular first molars (PMFM) as a sign of endodontic immaturity. **Methods:** Sixty extracted PMFM were used and distributed, according to age, in the following groups: Children: <14 years, Adolescents: 14/19 years, Young Adults: 30/39 years and Older Adults: > 40 years. The presence of a) a single canal; b) isthmuses joining both mesial canals, and c) two individualized canals, was determined by performing four cross-sections at coronal, middle, and apical levels and at the foramen proximity (FP) of the mesial roots. The comparative analysis between groups was made using Chi square test. **Results:** The comparative analysis between levels and age groups, revealed that at coronal and middle levels, the number of isthmuses was significantly higher ($p < 0.05$) in both the children and in adolescents, relative to that of older adults. There was no significant difference among ages at apical level ($p > 0.05$) and PF (2 mm from the apex), the presence of isthmuses was significantly higher ($p < 0.05$) in adolescents as compared with young adults and older adults. The marked predominance of isthmuses in children and adolescents and their clear decreasing number of young adults and older adults makes it evident that their presence is due to the lack of maturity of the endodontic cavity, which is natural at early age if the root is rather complex. The atypical situation observed at the apical level, is common for the anatomical complexity showing this sector. **Conclusion:** The high prevalence of isthmuses in children and adolescents compared to adults at all levels of the canal, is a clear sign of immaturity of the pulp cavity. By contrast, the significant decrease observed in young adults and particularly in the older adults shows the natural maturity process that occurs with endodontic age.

Keywords: mandibular molar, Isthmus, age.

146

LEARNING LATERAL CONDENSATION TECHNIQUE. STUDY OF OBTURATION MASS.

de CASO, CN., CACHISUB, G., FERNANDEZ, A.*, GARAY, E., GARCIA DIAZ, M.

Department of Endodontics, Faculty of Dentistry. U. N. Cordoba. Argentina.
cndecaso@gmail.com

The endodontic obturation should be a compact mass, homogeneous, correctly adapted to the walls without empty spaces, which obliterate the three-dimensional space defined by the instrumentation. Lateral condensation is a relatively easy, but with many variables that need to be learned to ensure the quality of sealing mass and increase the sealing effectiveness of the technique. **Objective:** To evaluate the learning of lateral condensation technique by analyzing the presence of voids in the sealing mass on three different times and to establish the influence of operator experience in controlling variables governing this technique. **Methods:** Thirty teeth were used and distributed according to the operator's experience in Group I: students at the beginning of the school year, Group II: students at the end of the school year and Group III: young professional (5 years since graduation) with formation of graduate without specialty. Within each group, five teeth were upper central incisors (circular) and 5 upper canines (flattened). After performing instrumentation and obturation with lateral condensation technique, the teeth were included in polyester resin in order to perform five cross-sections in each root (apical, middle 1, middle 2, coronal 1 and coronal 2). The cross-sections surfaces were studied for the presence of voids. The data were statistically analyzed with the chi-square test, Fisher exact test. The limit of significance was $p < 0.05$. **Results:** Group III showed significantly lower frequency of voids in apical levels, middle 1 and coronal 1. The coronal 2 level no statistically significant differences in the groups studied. The presence of voids affected the root canals independently from the canalicular anatomy. **Conclusion:** A) The operator experience significantly influenced the frequency of voids in most levels studied. B) The frequency of voids in the coronal 2 level, was not affected by operator experience. C) The voids were presented independently of the canalicular anatomy.

Keywords: Lateral Condensation, voids, learning.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

147

EFFECT OF CARRAGEENAN ON CA-ATPASE FROM MASTICATORY MUSCLES: PRELIMINARY RESULTS

de la Cal C, Di Croce DE, Sánchez GA, Takara D. Fisiología, Farmacología, Bioquímica y Biofísica. Cátedra de Biofísica, Facultad de Odontología, UBA. carodelacal@yahoo.com.ar

Objective: Carrageenan (Carr) is a natural polysaccharide used in biological models to induce muscle pathophysiological conditions, such as pain, edema and inflammation. Moreover, regulation of muscle contraction requires a careful dynamic control of sarcomeric Ca^{2+} and ATP availability by the sarcoplasmic reticulum and mitochondria. The purpose of this study was to test the effect of Carr on the activity of Ca^{2+} -ATPase from rat masseter muscle (MM). **Methods:** Sarcoplasmic reticulum (SR) sealed membrane vesicles, with calcium accumulating ability, were isolated from rat MM, according to Champeil et al (1985). The protein concentration was determined by the technique of Lowry et al (1956). ATPase activity was determined according to the method of Baginski et al (1967). Rats were previously separated into 4 groups. One group received no treatment (Control), and the rest were anesthetized intramuscularly (IM) in the hind paw with 2% Xylazine (0,05 ml) and 50 mg/ml Ketamine (0,1 ml/100g rat weight). One group received no further treatment (Control anesthesia). The other groups were additionally injected with: 0.1 ml of physiological solution (FS) or Carr 0.1 ml IM in MM. The results were analyzed by 1-way ANOVA and Tukey test for multiple comparisons. **Results:** The results obtained for n = 4 performed in sextuplicate were: CA group ($187,440 \pm 33,306$) had lower ATPase activity than the other groups. Carr group ($229,862 \pm 35,285$) exhibited lower activity than C ($367,399 \pm 33,202$) and SF ($338,406 \pm 41,592$); while, SF group showed lower activity than C. Significant differences were found between group C and SF ($F = 134,052$; $p = 0,032$) and all the other comparisons were $p < 0.001$. **Conclusion:** The highest inhibitory effect on calcium pump was observed in group CA. However, FS reverted that effect, practically achieving the effect observed in C. This could be caused by the mechanical action of the IM injection in MM. Carr also reverted this effect, but to a lesser extent, which could be due to the action of the drug.
Grant UBACyT 20020110100082.

Key words: Carrageenan, Ca^{2+} -ATPase, masseter muscle

148

LONG TERM MAINTENANCE OF IMPLANTS AND DENTAL STRUCTURES IN INDIVIDUALS AFFECTED WITH PERIODONTAL DISEASE. (PRELIMINARY REPORT)

Feser G, Gulino M, Quintero A, Boccio I, Funosas ER.

Chair of Periodontology. Faculty of Dentistry. National University of Rosario. g-feser@hotmail.com

Objective: To evaluate the effectiveness of supportive periodontal therapy on survival of teeth and osseointegrated implants in individuals diagnosed with periodontal disease. **Results:** longitudinal study design patients seen in private practice. The sample consisted of 275 individuals with an average age of 56 years ($SD \pm 17.84$) who were clinically diagnosed with periodontal disease in varying degrees of severity. They received an initial therapy of hygienic phase and subsequently derivatives periodontal maintenance therapy every 6 months intervals. The follow-up period of observation was 96 months. Clinical variables taken were: plaque index, probing depth, attachment level, tooth loss, mobility, furcation lesions, bleeding on probing, gingival recession, among others. In turn systemic conditions and environmental risk factors for periodontal diseases were observed. Besides the aforementioned objectives surrogate also took real subjective criteria, which correspond to the perception and assessment of the patient to therapy support installed. The experimental design consisted of a multivariate analysis, noting the value of $p < 0.05$ for statistical significance. **Conclusion:** The periodontal maintenance therapy every six months achieved acceptable results and long-term stable for most of the variables studied decreased even tooth loss and conservation of osseointegrated implants in individuals diagnosed with periodontitis.

Key words: Periodontal disease. Epidemiology. Periodontal maintenance.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

149

SNUFF SMOKE EXPOSURE AND PREVALENCE OF SMOKING AMONG UNIVERSITY STUDENTS.

Feser G, Gulino M, Boccio I, Antuña MV, Quintero A, Lebié A, Dulong I, Funosas ER.
Chair of Periodontology. Faculty of Dentistry. National University of Rosario.
g-feser@hotmail.com

Objective: To analyze the prevalence of smoking and exposure to secondhand smoke, as well as the development of consumption of snuff in a given time in a population of university students for the health area. **Methods:** We performed a cross-sectional study of a convenience sample comprising students of fourth year dental career at the National University of Rosario. By choice questionnaires took records oral behavior and clinical variables on 1447 students in the span of the years 2001-2012. For association analysis was performed by Chi Square, setting the level of statistical significance with a p-value <0.05. **Results:** The sample group had a mean age of 24.7 years (95% CI 2.57-3.78), varying slightly the average age for nonsmokers (NS), passive smokers (PS) and smokers (S) but no significant differences. The prevalence of smoking was manifested in the first years observed as follows: NS 21%, PS 38.5% and S 40.5%. In 2012 that reflects the latest data extracted the distribution was as follows: NS 16.52%, PS 21.50% and S 61.98%. **Conclusion:** The prevalence of smoking showed a decrease in this specific population group, while environmental smoke inhalation was increased when compared with the current rates of the early.

Key words: Tobacco smoking. Snuff smoke exposure. Prevalence.

150

EFFECT OF DENTAL DISTRACCION APLICATOR TO DISTAL MOVEMENT OF UPPER CUSPID IN CLASS II 1^o DIVISION PATIENTS.

Baiocco J, Bass Pluer A, Arena L
FACULTAD DE ODONTOLOGÍA UNC- FUNDACIÓN CREO-FAMAF. javierbaiocco@hotmail.com

Objective: The objective of this study the effect of distal movement of upper cuspid by periodontal ligament distraction in Class II 1^o division patients. **Methods:** This is a clinical experimental study, a prospective observational type. The sample included ten patients between 15 to 25 years without previous orthodontic treatment with class II 1^o division malocclusion whose first upper bicuspid extraction was required. Right side was considered the "problem side" and the left side was considered "control side". Upper first bicuspids extractions were done. The right cuspid was moved distally applying the dental distractor (DD) technique while the left cuspid was moved using conventional technique with 200 gr. niti springs. The following aspects were measured in both teeth: velocity of movement, gingival insertion level, (mesial, distal, bucal and palatal) and pulpar vitality (previous of treatment) and two months later, and radicular integrity (through radiographic measurement before, during and after treatment). **Results:** For every parameter in this study parametric statistic and non parametric with the Mann Whitney Test were done. According to the velocity of dental movement at 20 days, right cuspid was moved more than twice than the left side. The non parametric test indicates that both dental movements were significantly different ($p < 0.0003$). Radicular resorption grade I (10%) was observed in one case that wasn't significant because the resorption affected all the anterosuperior area. The pulpar vitality tests indicate absence of pulpar mortality in every distalized cuspid. There was no significant difference in gingival insertion level between both sides. **Conclusion:** With the DD technique the cuspid can be moved to the extraction site in a safe and rapid way (maintaining pulpar vitality, radicular integrity and periodontal health if it is compared with the conventional retraction technique).

Key words: dental distraccion. distal movement.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

151

APPRAISAL OF APPLICANTS TO ENTER THE FOUNT, WITH REGARD TO THE LECTURING OF PHYSICS IN THE CINO Catalan, P.E.; Rodríguez, N.; Perez, L.I.; Cordoba, J.E.; Juárez, T.A.; Molina, P.E.; Merletti, S.M.; Alderete, M.S. Chair Biophysics. Faculty of Odontology National University of Tucumán. jecordoba354@hotmail.com

The introductory remedial course in Odontology (CINO) was implemented by the Faculty of Odontology of the National University of Tucumán (FOUNT) in the year 2003, in order to level the knowledge of General Physics learned in high school level and to offer equitable conditions for the candidates when they join university life. Knowing the opinions of the pupils allows to adapt the role of the teacher to the detected situations, so as to improve and optimize the process of education and learning. **Objective:** To get to know the assessment of applicants to enter the FOUNT on the lecturing of Physics in the CINO. **METHOD:** A sample 265 applicants was taken as a sample in the year 2012. An anonymous questionnaire of multiple-choice semi-structured questions was administered on the lecturing of Physics in the CINO. Information was requested on the its usefulness; the convenience of carrying out modifications; the principal source of support in the study of the subject matter, among other questions. A choice of several alternatives was offered. **Results:** 79 % of the polled pupils considered of usefulness the lecturing of Physics in the CINO. 46 % suggested to effect modifications: 31 % considered extending the it theory, explanation and practice of problems; 47 % indicated modifying the general organization in reference to schedules, obligatory nature and structure of evaluation; 6 % proposed to modify and to extend the bibliographical material; 23 % considered doing pedagogic reforms on the lecturing of Physics. The principal support in the study of Physics was: the CINO for 60 %; private tuition for 65 %; other means such as Internet, books, family, for 11 %; no option for 1 %. **Conclusion:** The lecturing of Physics in the CINO turned out to be beneficial for the majority of the applicants to enter the FOUNT. Its contents offer the necessary training that the pupil needs to confront the admission examination on the subject matter. Nevertheless, nearly half of them suggested modifying diverse aspects. This situation allows us to restate and to reform these topics, in agreement with the needs of the pupil and, at the same time, with the aims of the subject.

Key words: CINO, Physical, assessment.

152

ORAL MANIFESTATIONS IN PATIENTS WITH LYSOSOMAL DISEASE: A SYSTEMATIC REVIEW. Martínez LD12*, Azar NB2 y Mugnaini J2. (1) Biología Celular-Cátedra "B". Facultad De Odontología. U.N.C. (2) Centro De Estudio De Las Metabolopatías Congénitas (CEMECO), Hospital De Niños De La Santísima Trinidad, Córdoba, ARGENTINA. Idmartinez18@hotmail.com

Introduction: The lysosomal diseases constitute a large heterogeneous group of entities produced by genetic alterations that cause deficiencies in lysosomal proteins. This produces the intralysosomal accumulation of complex molecules that triggers severe and progressive structural and functional alterations of the affected organs. **Objective:** To determine the prevalence and type of manifestations in the oral ecosystem of children and adults with different pathologies of lysosomal origin, through a systematic review. **Methods:** it was accomplished a systematic review of the literature from May 1992 to March 2012 years. The databases used were PubMed Central biomedical and LILACS. The selection was performed by double blind desing, using the following inclusion criteria: epidemiological cohort studies and case-control disorders in patients diagnosed with oral lysosomal pathology. The words used in the online literature search were *lysosomal disorders* and *oral disorders*. **Results:** We identified 244 citations, and 4 (1.6%) studies contained the inclusion criteria, were selected entities Cystinosis (n = 1), Gaucher (n = 1) and Aspartilglucosaminuria (n = 2). In general, oral abnormalities seen include craniofacial abnormalities, taurodontism, defect in the enamel, dental developmental delay, and hyposalivation gingival overgrowth. **Conclusion:** Oral manifestations found in most prevalent and aspartilglucosaminuria cystinosis, are associated directly with the pathology. No correlation was found between oral alterations and Gaucher disease.

Key words: lysosomal disease, oral manifestations, metabolic disease.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

153

RELATION BETWEEN NUTRITIONAL STATUS, SALIVARY FLOW RATE AND CARIES RISK IN PRESCHOOLERS. Rodríguez P, Gamba A, Cohen S, Mateo MT, Manto MC, Tejerina D, Molgatini S, Argentieri A. Departments of General and Oral Biochemistry, Preventive Dentistry, and Microbiology and Parasitology, School of Dentistry, University of Buenos Aires. drcohenod@yahoo.com.ar

According to Modéer T. et al (2001), there is association between decreased salivary flow rate and caries in obese adolescents. **Objective:** The aim of the present study was to determine the association between nutritional status, salivary flow rate, and caries risk in preschoolers. **Methods:** The study comprised 63 children aged 60.3 ± 12.3 months, attending kindergartens in La Matanza district, Buenos Aires province. Body weight and height of the children were determined. Body mass index was calculated and the population was classified anthropometrically according to the WHO 2007 (WHO Anthro. Program). Caries risk was determined. Saliva was collected in sterile graduated wide-mouth containers, without stimulation and without food restrictions. Following, salivary flow rate (SFR) was determined. Statistical analysis was performed using Pearson's test. **Results:** 67% of anthropometrically adequate children (Ad) and 35% of overweight and obese children (OW/O) had caries. SFT was 0.534 ± 0.318 ml/min in Ad and 0.439 ± 0.234 ml/min in OW/O. Pearson's test showed no correlation between SFR and nutritional status ($r= 0.004592$, $P= 0.5977$).

Conclusion: Although the presence of caries was higher in overweight and obese children, no correlation was found between nutritional status and salivary flow rate. Grant UBACyT CO02.

Key words: nutritional status, salivary flow rate, preschoolers.

154

FLEXIBLE MODULE AND RESISTANCE TO FLEXION IN COMPOSITE RESINS OF MID DENSITY. Mirotti G*, Lutri P, Rozas C, Piconi C, Monserrat N, Croharé L, Sezin M. Operative Dentistry I A. Department of Buccal Rehabilitation. ABO. od_carlosrozas@hotmail.com

Introduction: Hybrid composite resins offer intermediate aesthetic results in relation to the microhybrids but both show excellent physical qualities. Likewise, the mechanical qualities are considered low to be applied in areas submitted to high occlusal strength. The so-called nanocomposites have glass fillings with nanometric sized particles and groups called nanoclusters which provide reinforcement mechanisms which turn out in significative improvement in the mechanical qualities. At present, the composites tend to get the top aesthetic levels, easy manipulation and durability. The incorporation of different types and sizes of fillings modifies the properties of resistance to a breaking and flexion. **Aim:** assessing the flexible module and resistance to flexion of hybrid composite resins, microhybrids, nanohybrids and nanoparticled. **Methods:** were divided in 6 groups of 8 specimen each group: Group 1: Filtek Z250 XT. Group 2: Polofil Supra (VOCO). Group 3: Te-Econom Plus. Group 4: Grandio. Group 5: Brilliant New Line (Coltène). Group 6: Prisma AP.H. They were condensed in a stiff matrix of 25 mm x 2 mm 2 mm and light cured for 20 seconds in each side with a LED unit. 4 samples from each Group were kept for 24 hours and the rest were kept for 30 days in a water environment at $37^{\circ}C \pm 1^{\circ}C$. It was used a universal testing machine for traction and compression which poppet speed was of 1 mm/min applying a central load for the flexural test of three points with free extremes. The information was put to the Kruskal Wallis and Mann Whitney test. **Results:** The average values of the flexible module in GP in 24 hours and in 30 days were higher in Group 4 (9,42) followed by Group 1 (7,01), Group 2 (5,19), Group 5 (4,35), Group 3 (3,10), Group 6 (2,43). The resistance to flexion in MPa in 24 hours was higher in Group 1 (112) followed by Group 4 (110), Group 5 (85), Group 2 (84), Group 3 (70), Group 6 (65). The resistance to flexion in 30 days was higher in group 4 (124) followed by Group 2 (119), Group 5 (117), Group 1 (111), Group 3 (95), Group 6 (82). The test of flexible module showed significant differences ($p<0,05$) among Group 4 and the rests not only in 24 hours but also in 30 days. There were significant differences ($p<0,05$) in resistance to flexion in 24 hours between groups 4 and 1 in relation to the others. It was made a significance ($p<0,05$) between groups 3 and 6 in relation to the others in the tests of resistance to flexion in 30 days. **Conclusion:** under these circumstances, the composed resins showed dissimilar values of flexible module and resistance to flexion in studied periods of time.

Key words: flexible module, resistance to flexion, composite resins.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

155

EFFECT OF THE BÁSIC THERAPY ON IGAs AND SALIVARY PEROXIDASE IN PATIENTS WITH PERIODONTITIS

Gramajo AM, Koss MA, Castro CE, López ME.
FOUNT . agugramajo@hotmail.com

Periodontitis is a disease that affects susceptible individuals generating tissue inflammation. The aggressive form is characterized by a fast and severe loss of the support tissues and generally begins in the puberty. Although the diagnosis is essentially based on the determination of the clinical parameters, there are auxiliary tools such as the analysis of saliva and/or the gingivo crevicular fluid. **Aim:** to compare levels of IgAs and peroxidase in total saliva of patients with aggressive periodontal disease under basic therapy. **Methods:** We worked with 55 individuals aged 26.9 ± 4.3 , 25 patients with aggressive periodontitis and the rest were the control group. Inclusion and exclusion criteria for both groups were considered. The periodontal diagnosis was performed through the determination of plaque and gingival indices, probing depth, insertion level, bleeding on probing and radiographic criteria. Saliva samples were obtained by salivation with 2 hours of starving during 2 minutes in cooled tubes. 2 samples were collected, at the basal state of the basic therapy and 15 days later. This therapy consisted on motivation, control of biofilm and root smooth. Samples were centrifuged and conserved at -20°C . Peroxidase was determined by the technique of Masson-Rahemtulla and IgAs by immune diffusion plates. Differences between groups were analyzed with ANOVA One Way Test through the SPSS program. **Results:** At the basal state, peroxidase values in aggressive periodontitis are lower than those of controls although there are not statistically significant differences ($p > .05$). After 15 days of therapy a significant diminution with respect to the basal state and to controls was observed ($p < .05$). IgAs increased in patients with aggressive periodontitis with respect to controls, after the treatment a slight diminution was observed, nevertheless values did not show significant differences ($p > .05$). **Conclusion:** The biochemical analysis of saliva offers a helping alternative tool for the clinical diagnosis of periodontitis.

Key words: IgAs, Salivary peroxidase, Aggressive periodontitis.

156

FABRICATION AND ATOMIC FORCE MICROSCOPY ANALYSIS OF A NEW HEAT-CURED NANOSTRUCTURED POLYMER.

Kreiner M, Marrs B, Andrews R, Benech J, Oddone N, Kaplan A, Pardo H, Momburú A. Universidad de la República, Uruguay; Universidad De Buenos Aires, Argentina; Universidad De Kentucky, EEUU; Instituto De Investigaciones Biológicas Clemente Estable, Uruguay. akaplan@mater.odon.uba.ar

AIM The present study developed a new nanostructured heat-cured polymer for its possible use in biomedical applications and also presents a preliminary surface analysis using atomic force microscopy. **Methods** The new nanostructured polymer was developed by dispersing multi-wall carbon nanotubes to the solid phase of the polymer ((Hygienic Denture Resin Type I, Class I, *Coltène/Whaledent*). Test specimens were prepared according to the ASTM specifications. A 3D analysis with atomic force microscopy was performed following the American Society of Mechanical Engineers specifications. We studied the parameters Image R_a , Image R_{max} and Image R_q . A control group was prepared using the same polymer without the nanotubes. **RESULTS** We were able to disperse the carbon nanotubes in the solid phase of the polymer. The 3D analysis showed structural differences between the control and the nanostructured polymer. The following measures were obtained: Image R_a : control 18,4 nm, nanostructured 37,3 nm. Image R_{max} : control 264 nm, nanostructured 392nm. Image R_q : control 23,8 nm, nanostructured 29,4nm. **Conclusion:** All values were higher for the nanostructured samples with the implication of a higher roughness when compared to the control samples. The present preliminary study allowed the development of a standardized method for the fabrication of a new polymer and also allowed the consolidation of an interdisciplinary research group in the biomedical area of nanotechnology.

Key words: polymers, nanotechnology.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

157

EXPERIMENTAL DESIGN TO EVALUATE INTERRADICULAR BONE RESPONSE IN OCCLUSAL HYPOFUNCTION.

Ledesma PA, Lewicki M, Mandalunis PM. Department of Histology and Embriology, School of Dentistry, University of Buenos Aires. patricialedesmab@gmail.com

It is well known that anabolic stimuli affects the development and remodeling of the bone. The occlusion is an important factor in maintaining bone mass and structure of the jaw. The jaw receives mechanical stimuli provided by chewing and, the loss of normal occlusion leads to structural changes in alveolar bone. By this, is important to study the relationship between occlusal function and interradicular bone mass. The **objective** of this study was to design an experimental model to evaluate bone volume in occlusal hypofunction. **Methods:** Nine female Wistar rats at 45 days of age and 144.89 ± 9.57 gr were used. On day 1 of experience right maxillary molars crowns were worn and, on day 25th of experience a second wear was performed in the same molars. At 45 days of experience were euthanized and the mandibles were removed which were divided into two groups, Group A: the right mandibles whose molars were induced to occlusal hypofunction by wear of opposing molars. Group B: left mandibles whose antagonists did not suffer wear. Mandibles was fixed, decalcified and processed histologically to perform oriented mesiodistal sections of the lower first molar. The sections were stained with H&E and on microphotographs the following histomorphometric parameter was evaluated: Interradicular bone volume (BV/TV) (%) in both groups. **Results:** BV/TV (%), Group A: 48 ± 5 and Group B: 53 ± 10 , $p=0.198$. **Conclusion:** The results of this study show that in this experimental design no changes affecting bone volume in rat mandible in occlusal hypofunction. UBACyT 20020090100210.

Key words: hypofunction; interradicular bone.

158

MECHANICAL PROPERTIES OF RESIN BASED FIBER POSTS.

Garrofé A, Picca M, Kaplan A.
Department of Dental Materials, School of Dentistry, University of Buenos Aires.
analiagarrofe@gmail.com

Objective: The purpose of this study was to determine flexural strength, elastic modulus, and resistance to fracture at 45 degrees of six commercial fiber posts. **Methods:** Six groups (n=10) of commercial fibers post were used: Tenax Fiber Trans (Coltene Whaledent) [TF], Parapost (Coltene Whaledent) [PF], Glass Post (Densell) [GP], Translux Post (Densell) [TP], Macro-Lock (RTD) [ML], and White Post (FGM) [WP] (n=5). The samples were stored at 37° C for 24 hours. Five samples per group were used for three-point bending test (span length=7mm) in order to determine flexural strength and elastic modulus. Five posts were included in PMMA, except for the 5 coronal mm, in order to determine resistance to fracture at 45 degrees. Mechanical properties were evaluated using a universal testing machine (Instron Corp, 1011) with a crosshead speed of 0.5mm/min and a cell load of 500N. Results were analyzed with multivariate ANOVA to the dependent variables flexural strength, elastic modulus and resistance to fracture at 45°, and Tukey's Test for mean comparison. **Results:** Mean and standard deviation (MPa) for flexural strength for each group was: TF=1126.11(54.12), PF=746.36(28.15), GP=12.88(1.58), TP=1181.49(56.58), ML=612.26(79.54), WP=714.05(53.93); elastic modulus: TF=16.12(0.98), PF=12.40(1.16), GP=12.88(1.58), TP=28.51(1.12), ML=9.62(1.45), WP=11.35(1.16); and resistance to fracture at 45° was TF=1205.07(52.34), PF=2064.43(143.23), GP=1306.44(85.17), TP=1505.25(198.73), ML=1146.43(119.43), WP=1739.09 (118.40). ANOVA showed significant difference for the three evaluated variables ($p=0,000$). **Conclusion:** Under the conditions of this study, it can be concluded that geometry and load direction influence mechanical properties of fiber posts. This study was financed with University of Buenos Aires Grant 20020090100178BA

Key words: fiber post, mechanical properties.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

159

A METHOD TO STUDY PULP TISSUE. EMBEDDING IN ACRYLIC RESIN.

Rodriguez P2, Renou SJ*1, Lenarduzzi A2, Buldo M2, Martínez P2, Corominola P2, Sierra L2, Gugliemotti MB1, 3. Departments of Oral Pathology¹ and Endodontics², School of Dentistry, UBA; AND CONICET³. sandrarenou@gmail.com

The histoarchitecture and pathologies of pulp tissues are of permanent interest from a histologic, histomorphometric, and immunohistochemical point of view. **Objective:** To establish a systematic method for the macro- and microscopic study of pulp tissue embedded in acrylic resin together with the pulp extractor. **Methods:** The study was performed on human pulp obtained from patients seen at the Endodontics Department of the School of Dentistry of the University of Buenos Aires, diagnosed as having vital pulp and needing endodontic treatment. All patients underwent total biopulpectomy. Ten samples of pulp extractors containing tissue were fixed in formalin. Some of the samples presented remains of pulp tissue that was unrelated to the instrument. Gross examination was performed using a stereoscopic loupe (Zeiss), in order to determine sample size and the tissue in the active part of the instrument. The tissue extractors were processed for embedding in methyl-methacrylate (MM). Ground sections were obtained and stained with 1% toluidine blue and Masson's trichrome technique. The pulp tissue embedded in paraffin was stained with H-E and Von Kossa. **Results:** The macroscopic study showed that 83% of the apical third of the pulp extractors contained pulp tissue. The histological study showed features compatible with chronic inflammatory pulpitis, with areas of fibrosis, fibro-hyalinosis, and mineralization, which varied greatly in distribution and appearance. **Conclusion:** The method proposed herein will allow performing macroscopic, histologic, histomorphometric, and immunolabeling studies of dental pulp. Grants: CONICET PIP 11220090100117, UBACYT 20020100100657

Key words: dental pulp, histology, methyl methacrylate.

160

EFFECT OF PRESSURE ON BUBBLES IN ENDODONTIC SEALERS

Gani O., Mutal L.
Department of Endodontics. Faculty of Dentistry. UNC. Córdoba. Argentina.
lilimutal@hotmail.com

Previous studies showed that all endodontic sealers have a porous structure and that the number and size of bubbles depend on the nature of each sealer. However, how these bubbles behave when, subjected to pressure, the sealer is reduced to very thin layers, remained to be known. **PURPOSE:** To analyze the presence and behavior of the bubbles in the layers of endodontic sealers, when they are reduced by pressure to micrometric thicknesses. **METHOD:** Four endodontic sealers (AH26, Tubliseal, Sealer 26 y Endo Sell) were studied. Once the mixture had been prepared, a small quantity of it was placed between two slides that were immediately fixed and held in place by means of pliers, while the sealer was reduced to very thin layers as a result of pressure. The samples thus prepared (6 for each sealer) were stored for 8 days at 37° C and 95% humidity. Finally, once the pliers had been removed, both slides were fixed with an instant adhesive in order to obtain by fracturing, various fragments to be studied. The thickness of the sealer film was measured on the fracture surface, following SEM, and the presence of bubbles was studied, which were classified as exceptional, low, frequent, and numerous, using an ad-hoc classification. **Results:** The method designed proved to be suitable for the study. The average thicknesses of the layers were AH26=50.5µm, Tubliseal=63.7µm, Sealer 26=44.6µm y Endo Sell=56.8µm. Bubbles were low on Tubliseal and Endosell, and numerous on AH26 and Sealer 26. The length of the diameters varied among the different sealers, and if they surpassed the thickness of the layer, the bubbles were compressed and misshaped as a result of pressure. The sealer fluency is another factor to be considered in the results. **Conclusion:** Despite the pressure and thinness of the film, bubbles were an ever-present finding on all the sealers, with predominance on sealer 26 and AH26. The effect that pressure exerts on the bubbles depends on the physical properties of the material.

Key words: endodontic sealers film thickness bubbles.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

161

BONE MARROW RESPONSE TO POROUS POLYETHYLENE IMPLANTS. A HISTOLOGIC STUDY

Martinez Rodriguez J1*, Renou SJ1, Guglielmotti MB1,2.
Department of Oral Pathology, School of Dentistry, UBA1; AND CONICET2 .
julianadmartinez@gmail.com

Porous polyethylene is a biomaterial used in maxillofacial surgery to reconstruct bone defects, and for facial augmentation in orthognatic surgery. "In vivo" experimental studies have reported the presence of fibrovascular tissue inside the pores and some have reported osteogenic response. **Objective:** To evaluate the response of hematopoietic bone marrow to porous polyethylene. **Methods:** The biomaterial was analyzed by SEM and EDX. Twenty male Wistar rats (150-180g) underwent implantation of porous polyethylene* (PP) under general IP anesthesia. Group 1 (transcortical): A 2mm-diameter punch was used to perforate the femur and to obtain a 1mm thick PP implant, which was inserted in the cortical bone. Group II (intramedullary): a 1mm-wide/2mm-high/0.9mm-thick sheet of PP was placed in the medullary compartment of the tibia. The animals in both groups were euthanized 14 days post-surgery. The guidelines of the NIH and the Ethics Committee of the FOUBA were observed. The bones were resected, fixed in 10% formalin, radiographed, demineralized, and processed for embedding in paraffin and H-E staining. **Results:** SEM showed that the pores of the PP differed in shape and size. Composition according to EDX was 96.88% C and 3.12% O₂. None of the cases exhibited inflammatory response, giant multinucleated cells, or macrophages. Fibrous tissue in contact with the muscle and woven and lamellar bone tissue surrounding the biomaterial were observed in Group I. The intramedullary implants in Group II were surrounded by lamellar bone tissue. The experimental model used herein showed that, as a biomaterial, porous polyethylene is compatible with the hematopoietic bone marrow. Further studies will be conducted to characterize this biomaterial and evaluate the dynamics of the repair process through time. Grants: CONICET PIP 11220090100117, UBACYT 20020100100657* MEDPOR®.

Key words: porous polyethylene, bone repair, hematopoietic bone marrow.

162

MUSCULAR BEHAVIOR OF ORTHODONTIC SUPERELASTIC ARCHES OF DIFFERENT DIAMETERS AGAINST DEFLEXIVES FORCES IN A LIQUID MEDIUM.

Pedroso RL, Morata M, Pérez Bazán ME, Politi Mattar C, Avellaneda AR, Pedroso LE. Cátedra De Ortodoncia. Facultad de Odontología. Universidad Nacional de Tucumán. roberlois10@gmail.com

In orthodontic therapy, arch wires which present great elasticity, are used to exert light forces. They are NiTi and copper NiTi heat-activated metal alloy arcs, called muscle arches, since its molecular structure changes from solid to solid via thermal variations. The aim of this study was to compare the behavior of super elastic round arches of different trademarks, and to measure the force generated by thermal changes in a liquid. Brackets were cemented in all teeth on acrylic model; then super elastic Nitinol and Niticopper arches on all of teeth and bands were installed on the first and second molars (Straight-Wire technique) with 0.2" wire ties. The model was setting in a steelmould, where a dynamometer and a digital thermometer were incorporated. Upper right central incisor bracket was removed. In the labial surface of the piece two brands from the incisal edge to the distance of 1 mm were made. Each of one served as reference for measuring the deflection of orthodontic arches. Each arc bound to the brackets of the model was connected to the meter of forces through a steel wire, which generated 2 mm deflection. Placing the dynamometer at zero and discarding the initial energy, in order to measure the force generated by the arc subjected at temperatures of 30°C, 38°C, 40°C, 50°C and 60°C degrees Celsius in a liquid medium. Forty arches were used: 20 of 0.016 inches and 20 of 0.014 inches diameter each ones whose brands include: GAC®, 3M® and ORJ® made of Nitinol and ORMCO® made of NiTiCu. Data were statistically analyzed using the nonparametric Kruskal-Wallis test. At a temperature of 30°C there is a significant difference ($p < 0,01$), between the arches of the GAC® and ORMCO® compared to the arcs 3M® and ORJ®, because these ones produce less muscle strength. Instead, at a temperature between 38°C and 40°C it showed the same behavior. Arcs 3M® of 0.016" generated less muscle forces than other trademarks arcs, at all of considered temperatures. These arches would be indicated as a second arch in adult patients with periodontal problems, since it generates muscle strength from one to six times less than the other arches, according to the temperature generated.

Key words: Heat-activated arcs, super elasticity, nitinol arcs.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

163

IMPACT OF THE LEVELING CYCLE (CINO) OVER MOOD AND SOCIAL LIFE OF APPLICANT

Rodríguez de Nieman N; Catalán PE; Pérez LI; Juárez TA.; Córdoba JE; Merletti SM; Alderete de Combes MS. Cátedra de Biofísica. Facultad de Odontología de La Universidad Nacional de Tucumán (FOUNT) jecordoba354@hotmail.com

The incomers of the FOUNT, must reach the minimum level of knowledge required in the basic subjects. In order to make this process easier, was implemented since 2003 Leveling Cycle, that included the following subjects: Reading Comprehension, Chemistry, Physics and Biology. The attendance and approval of final exams are prerequisites to admission into the Dentistry Faculty. The journey through this period may lead to a change in the aspirant's life. **Objective:** To establish the impact that the leveling cycle has over the student's emotional and social life. **Methods:** A 265 students population was analyzed. They completed the CINO in 2012. At the end of the cycle, semi structured survey was administrated where the applicant indicated if, during these period, modified their activities, if they got sick more than usual, if altered his sporting, social and family life. It was also asked about changes in their mood, weather it was the same as usual, if they felt tired, stressed, excited, irritable, depressed or anxious). Adding alternatives was allowed and also, choosing more than one option. **Results:** 3.4% of the students manifested they haven't had changes in their life: 12.83% got sick more often, 43% saw his sporting life modified, 73.2% altered their social life and 57% family life. In the emotional area 13.58% manifested their mood was the usual, the 57.73% said they felt more tired, 36.6% felt stressed, the 45.28% excited, the 79.24 % irritable the 40.37% pressed, the 23.77% anxious, the 1.13% depressed and less than 1% disturbed, worried or fearful. **Conclusion:** Most of the Cino's students affirm that while they are studying for CINO, their social life become affected, especially concerning their social activities. Their state of mind reflect, with the exception of a small group, the crisis and adaptation's stages proper tensions.

Key words: impact, applicant, mood.

164

ADHESION TEST VALIDATION FOR COUNTING STREPTOCOCCUS MUTANS GROUP

Gliosca L, Stoppani N*, Soken L, Gomez Gutierrez N, Pistocchini A, Squassi A, Molgatini S. Laboratory of Microbiological Diagnostic, Department of Microbiology, School of Dentistry, University of Buenos Aires nicolasstoppani@gmail.com

AIM: to validate the adhesion test in modified Gold medium and its predictive value, to be used as a microbiological method in the evaluation of carious lesion. **Methods:** According to ICDAS criteria (Pitts, 2005), 154 adult patients (>21 years) who were attend to the Preventive and Community Dentistry Department FOUBA during 08/2011 and 08/2012, have been diagnosed. The studied population was divided into two groups according to the presence/absence of caries lesions: Group A: ICDAS lesion code =0 (L=0) in all the dental surfaces (n=23); and Group B: L>1 (n=131). Habits and diet history were recorded. Previous rinsing with distilled water and according to protocolized fasting and oral hygiene conditions, saliva samples were taken and were immediately submitted to the Microbiologic Diagnosis Laboratory Service – Microbiology Department FOUBA-. The samples were homogenized and tenth consecutively diluted. 100 ul were sown in 9.9 ml of modified Gold medium (selective and differential) in sterile plastic bottles with 25 cm² of contact surface. They were incubated for 48 hours at 36+1°C. Afterward, the supernatant medium was eluted, washes with sterile distilled water were performed twice, and The results were read by calibrated personal using a stereomicroscope.50X. **Results:** In the group A, the microbiological counts for SmG were in the order of 1 x 10⁴ and 1x 10⁵ UFC/ml (Log10=4.5); meanwhile in the group B were higher of 1 x 10⁶ UFC/ml (Log10=6.14). **Conclusion:** The results show that this adhesion test has a satisfactory microbiologically predictive positive value (91%). Therefore, we could concluded that values of SmG higher than 1,68 x 10⁵ UFC/ml could be a microbiological cut off point that matching carious lesion.

Key words: Streptococcus mutans group, adhesion test, carious lesion.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

165

FLEXIBLE MODULE AND RESISTANCE TO FLEXION IN COMPOSED RESINS OF MID DENSITY.

Mirotti G*, Lutri P, Rozas C, Piconi C, Monserrat N, Croharé L, Sezin M.

Operative Dentistry I A. Department of Buccal Rehabilitation. ABO.Faculty of Dentistry. Unc. Córdoba. Argentina. od_carlosrozas@hotmail.com

Aim: assessing the flexible module and resistance to flexion of hybrid composite resins, microhybrids, nanohybrids and nanoparticled. **Methods:** were divided in 6 groups of 8 specimen: Group 1: Filtek Z250 XT. Group 2: Polofil Supra. Group 3:Te-Econom Plus. Group 4: Grandio. Group 5: Brilliant NewLine. Group 6: Prisma AP.H. Were condensed in a matrix of 2 mm x 2mm 2mm and light cured for 20 seconds in each side with a LED unit. 4 samples from each Group were kept for 24 hours and the rest were kept for 30 days in a water environment at 37°C. It was used a universal machine for traction and compression which poppet speed was of 1 mm/min applying a central load for the flexural test of three points with free extremes. The information was put to the Kruskal Wallis and Mann Whitney test. **Results:** The average values of the flexible module in GP in 24 hours and in 30 days were higher in Group 4 (9,42) followed by Group 1 (7,01), Group 2 (5,19), Group 5 (4,35), Group 3 (3,10), Group 6 (2,43). The resistance to flexion in MPa in 24 hours was higher in Group 1 (112) followed by Group 4 (110), Group 5 (85), Group 2 (84), Group 3 (70), Group 6 (65). The resistance to flexion in 30 days was higher in group 4 (124) followed by Group 2 (119), Group 5 (117), Group 1 (111), Group 3 (95), Group 6 (82). The test of flexible module showed significant differences ($p<0,05$) among Group 4 and the rests not only in 24 hours but also in 30 days. There were significant differences ($p<0,05$) in resistance to flexion in 24 hours between groups 4 and 1 in relation to the others. It was made a significance ($p<0,05$) between groups 3 and 6 in relation to the others in the tests of resistance to flexion in 30 days. **Conclusion:** under these circumstances, the composite resins showed dissimilar values of flexible module and resistance to flexion in studied periods of time.

Key words: composite resins, flexible module, resistance to flexion.

166

COLOUR DETERMINATIONS IN BLEACHED AND UNBLEACHED DENTAL ENAMEL

Tellez N, Avalos M, Kaplan A.

University of Los Andes, Institute of Physics (Ifir), University of Buenos Aires. nardatellez@hotmail.com

Objective This study aimed to determine the chromatic alteration on dental enamel treated with bleaching agents and remineralizers by means of Cie Lab system (Adobe Photoshop®). **Methods:** Thirty-two human premolars were divided into two halves so that sixty-four specimens were obtained from buccal, lingual or proximal faces. Samples obtained were included in acrylic and randomly divided into three groups: Group 1: n=32, bleached enamel treated with hydrogen peroxide 38% (HP) for 45 minutes, stirred every 5 minutes. Group 2 n=8 Bleached and re mineralized: HP + calcium carbonate and arginine (CCA), remineralizer was applied on enamel surface for 3 minutes and n=8 HP + and complex of casein phosphopeptide and amorphous calcium phosphate 10% (CPP-ACP); Group 3: n=8 CPP-ACP and N=8 CCA. All samples were digitalized using a scanner (Canon) on a grey scale with 1200 dpi at the same time and saved in tif format. *L value was determined in all images and three determinations per simple were performed. Results were analyzed with two-level ANOVA (treatment-value), with a $p= 0.05$. **Results** Mean values obtained were: Group 1: 87,253; Group 2: 88,322 and Group 3: 85,223. There was no significant difference ($p>0,05$) and no significant difference was found among mean values with a confidence interval of 95%. **Conclusion** Under the experimental conditions of this *ex vivo* study, bleaching with hydrogen peroxide and its combination with ACC y CPP-ACP as remineralizers, would produce a colour modification in human enamel in terms of value.

Key words: Bleaching, Remineralizers, Value, Arginine, Casein Phosphopeptide





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

167

MICROBIOLOGICAL INDICATORS OF PERIODONTAL STATUS IN PEOPLE LIVING WITH HIV AIDS WITH AND WITHOUT ANTIRETROVIRAL THERAPY. Gliosca L*, Bozza F, D'Eramo L, Abusamra L, Squassi A, Molgatini S. Laboratory of Microbiological Diagnostic, Department of Microbiology & Preventive and Community Dentistry Department, School of Dentistry, University of Buenos Aires . lgliosca@yahoo.com.ar

The **aim** of the present study was to compare microbiological indicators from periodontal pockets and oral mucous of HAART-treated HIV+ patients (G1) vs. No HAART-treated HIV+ patients (G2). **Methods:** The studied population was divided into two groups, G1 n=18 and G2:n=10 CD4>350cells/mm³. 28 mucosal surfaces and 112 periodontal sites were microbiologically studied. The samples were obtained by swabbing oral mucosa and placing four sterile paper points into the pockets. The paper points were transported in 1ml of RTF.100 ul of the homogenized sample and their dilutions were used for microbiological study. They were seeded in supplemented sheep blood agar (with hemin and vitamin K); Levine agar, Aa selective medium, bilis esculin agar plus potassium tellurite 0.1%; CHROMagar Candida® and mannitol salt agar. **Results:** G1: Oral mucosa: Aerobic microorganisms (G1AeM n=18): *S.aureus* (Sa) 5.55%; negative coagulate staphylococcus (NSC) 22,2%; total yeast (tY) 33,3% {*C.albicans* (Ca) 66,6%; *C. dubliniensis* (Cd) 16,6%, *C.Krusei* (Ck) 16,6% and *C.tropicalis* (Ct)16,6%}; enterobacteriaceae (E) 0% and *E. faecalis*(Ef) 5,55%. G2: Oral mucosa: Aerobic microorganisms (G2AeM n=10): Sa 10%; NSC 40%; tY 60% {Ca 66,6%; Cd 16,6%, *Candida sp.* 16,6%}; E 10% (*K pneumoniae* (Kp) 100%) y Ef 0 % G1: Periodontal sites: Aerobic microorganisms (G1AePS n=72): Sa 8,3%; NSC 37,5%; tY 45,8% {Ca 54,54%; Cd, 45,45%;*C. glabrata* 9,09%};E 1,4% (*C.freundii* (Cf)100%) y Ef 1,4 %. G2: Periodontal sites: Aerobic microorganisms (G2AePS n=40): Sa 10%; NSC 27,5%; tY 45% {Ca 66,6%; Cd, 45,45% ; *Candida sp* 22,2% (more than 1 species per site); E 7,5% (*C.f* 33,3 % Kp 66,6%) y Ef 0 %. G1: Periodontal sites: Anaerobic microorganisms (G1AnPS n=72): *Fusobacterium sp* (F.sp) 43,05% {*F nucleatum* (Fn) 25,8%}; total black pigmented bacteria (tP) 44,4 %; {*Porphyromonas gingivalis* (Pg) 1,4%, *Prevotella intermedia* (Pi) 12,5 %}. G2: Periodontal sites: Anaerobic microorganisms (G2AnPS n=72): *Fusobacterium sp* (F.sp) 4,20% {*F nucleatum* (Fn) 0%}; total black pigmented bacteria (tP) 44,4%; {*Porphyromonas gingivalis* (Pg) 1,4%, *Prevotella intermedia* (Pi) 12,5 %}. **Conclusion:** There are significant differences in oral microbiological indicators between HAART-treated HIV+ patients and No HAART-treated HIV+ patients depending on CD4+ title.

Key words: HIV+, periodontopathic microorganisms, HAART.

168

MOLECULAR STUDY OF THE PREVALENCE OF PERIODONTOPATHIC MICROORGANISMS –RED COMPLEX- IN CHRONIC PERIODONTITIS

Gliosca L, Maccarone G*, Pontarolo C, Di Conza J, Molgatini S.Laboratory of Microbiological Diagnostic, Department of Microbiology, School of Dentistry, University of Buenos Aires.gabriela.maccarone@gmail.com

The red complex's bacteria (RCB), are microbiological indicators of periodontal disease evolution. The aim of the present study was to determine the prevalence of bacteria belonging to the red complex (*Porphyromonas gingivalis*, Pg; *Treponema denticola*, Td y *Tannerella forsythia*, Tf) in periodontal sites of patients with chronic periodontal disease (CPD). **Methods:** we have been studied 21 periodontal sites with signs of active periodontal disease from 8 patients who attend to the Periodontal Department of the FOUBA during 11/2011 and 05/2012. Patients signed the Informed Consent form authorizing a voluntary participation. The samples were taken, by introducing four sterile paper points N° 35 in the periodontal pocket previous supragingival biofilm remotion. The paper points were immediately transported in 1ml of RTF (refrigerated transport media) to the Microbiologic Diagnosis Laboratory Service – Microbiology Department FOUBA-. 100 ul of the homogenized sample were used for microbiological study by culture - Gold Standard and 200 ul were processed for genomic DNA extraction using QIamp DNA mini kit QIAGEN®. The purified genomes underwent PCR techniques with specific primers for each microorganism of the RCB (Ashimoto y col 1998). The specific amplicons were evidenced using 1.5% agarose gels y TAE buffer with 0.05% of ethidium bromide. The visualization was made using Gel doc XR, Bio-Rad (Biochemistry University, UBA). **Results:** from the studied sites, 15:21 (71.42%) Pg; 6:21 (28,57%) Td; 16:21 (76,20%) Tf, showed positive specific amplification. 2:21 (9,52%) sites were positive to Pg in the microbiological study by culture. The direct tests with Gram showed a 100% correlation with the PCR detection of Td. **Conclusion:** Under the study conditions, the molecular techniques showed above 70% prevalence of Pg and Tf, and detected a 28,57% of Td (non arable bacteria). An increase in the number of samples and the detection of virulence factors such as *fimA* in Pg may enrich the epidemiology of EPC in our population.

Key words: Molecular Biology, Red complex, Chronic Periodontitis





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

169

COMPOSITE SHRINKAGE STRESS ON SEVERAL SUBSTRATES

Lei MA, Mac Alpine Byrne CL, Iglesias AM, Kaplan AE.
FACULTAD DE ODONTOLOGIA DE LA UNIVERSIDAD DE BUENOS AIRES.
alejandralei@hotmail.com

Objective: the aim of this study was to evaluate the effect of flowable composite or glass ionomer used as liners on shrinkage stress of a restorative composite resin. **Methods:** fifteen metal boxes previously sandblasted were used. They were attached to a universal testing machine (INSTRON 1011, Instron Corporation). Five boxes (G1) were filled with Filtek Z350 XT (FXT) Universal Restorative A2 (3M ESPE). As curing unit activation was initiated a video camera registered up to 60 seconds during light curing and 20 seconds post curing. Force values were registered in Newton (N) and converted into load according to contact surface. Stress values were registered every 10 seconds. Two groups of boxes were prepared (5 in each) interposing a layer of Vitrebond Light Cure Glass Ionomer 3M ESPE (VGI) (G2) and Filtek Z350 XT Flowable Restorative A2 3M ESPE (FFR) (G3) between the box and the composite resin. The same final volume was prepared (in bulk) as the samples in G1. Results obtained were analyzed using repeated measures ANOVA. **Results:** Mean and standard deviation (N) of the maximum value registered for each group was: VGI: 2.722(1.011); FFR: 1.566(1.095); FTX: 7.098(1.729). Statistical analysis showed significant differences between G1 and the rest ($p=0.00$), with no significant differences between groups with flowable resin or glass ionomer liners (G2 and G3). **Conclusion:** under the experimental conditions of this study it can be concluded that polymerization shrinkage stress would be diminished by the presence of a lining material between preparation and restorative material. This study was financed by University of Buenos Aires Grant 20020090100178BA.

Key words: Composite-Shrinkage Stress-Flowable Composite-Liner

170

POLISHING EFFECT ON THE SURFACE HARDNESS OF PHOTOPOLYMERIZABLE RESINS

Rosino VM*, Olguín AJ, Sanchez Torrens R, Toledo A, Hernández JL.
OPERATIVE DENTISTRY. FACULTY OF DENTISTRY. U.N.T
vivianarosino@hotmail.com

Objective: The objective of this work was to study the influence of polishing on surface hardness of two types of light-curing resins, using the method of Vickers microhardness. **Methods:** The study was conducted with both of micro-hybrid resin (Filtek Z100 (3M ESPE) and Filtek Z350 Nanoparticles (3M ESPE) in translucent enamel. 30 Specimens were prepared resin 10 mm. Diameter and 2 mm. thick accomplished with a metal mold were polymerized with Halogen (QTH) light LED and halogen more thermo lighting. Each type of resin is divided into 3 groups according to the polymerization medium with $n = 5$. Samples stored for 7 days in distilled water at 37 ° C. Subsequently Vickers microhardness was measured by applying a force of 300 g. for 15 seconds in three points of the upper surfaces. In a second step the samples were included in a self-curing acrylic resin, forming blocks of 2 x 2 cm, were polished with a polisher laboratory, the sequence finishing with sandpaper 600.1000 granulation, 1500, 2000 and 2500 to 200 rpm with cooling water, for 1 minute each sandpaper. After polishing was measured Vickers microhardness again. Data were statistically analyzed with ANOVA and Kruskal Wallis at $p < 0.05$. **Results:** For both resins, microhybrids and Nanoparticles with three polymerization types Vickers microhardness values increased after polishing, with statistically significant differences. **Conclusion:** In the resins used in this study the polished surface increased microhardness significantly. This work was made in the Testing Laboratory of the Department of Biomaterials FOUNT. Partially subsidized by the CIUNT.

Key words: Polished, Resins, Microhardness, Halogen Light, LED





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

171

SHRINKAGE STRESS IN COMPOSITE RESINS WITH DIFFERENT INSERTION TECHNIQUES AND CURING LIGHTS

Mac Alpine Byrne CL, Lei MA, Iglesias AM, Picca M, Kaplan AE. Department of Dental Materials, School of Dentistry, University of Buenos Aires. caromac_alpine@hotmail.com

Objective: the aim of this study was to determine the effect of material, light source and insertion technique on shrinkage stress generated during composite resin polymerization. **Methods:** materials were used Filtek Z350 XT (FXT) Universal Restorative A2 3M ESPE and Tetric N-Ceram (TNC) Dental Restorative A2 Ivoclar Vivadent. Five samples were carried out with each insertion technique: horizontal technique (HT) and five with oblique technique (OT), cured with a halogen curing unit (HU) XL3000 (3M/ESPE) and a Led unit (LU) Dentomérica Litex TM 680 A. Metal boxes previously sandblasted and attached to a universal testing machine (INSTRON 1011, Instron Corporation) were used. Force values were registered in Newton (N) and converted into load according to contact surface. As curing unit activation was initiated a video camera registered up to 60 seconds during light curing and 20 seconds post curing. Stress values were registered every 10 seconds for all tests. Five determination per group were carried out. Results obtained were analyzed using repeated measures ANOVA. **Results:** Mean and standard deviation (N) of the maximum value for each composite, curing light and technique were:: FXT/HU/HT 7,098 (1,729); FXT/HU/OT 3,437 (0,952); TNC/HU/HT 4,030 (1,304); TNC/HU/OT 2.68 (0,816); TNC/LU/HT 5 (3,334); TNC/LU/OT 2,925 (0,921); FXT/LU/HT 3,711 (1,654); FXT/LU/OT 3,182 (0,367) . Statistical analysis showed a significant effect for material, technique and light source, and Composite/technique, Composite/light source , light source/technique and Composite/light source/technique (p=0.00). **Conclusion:** under the experimental conditions of this study it can be concluded that shrinkage stress generated during polymerization would be influenced by several factors such as material used, light source and insertion technique. This study was financed by University of Buenos Aires Grant 20020090100178BA.

Key words: Composite, Shrinkage Stress, Insertion technique, Light-cured

172

INFLUENCE OF POLYMERIZATION MODES ON THE OPTICAL PROPERTIES OF THE RESINS

Rosino VM*, Gor S, Olgúin AJ, Sánchez Torrens R, Hernández JL. Operative Dentistry. Faculty of Dentistry. University National of Tucumán, Argentine .
vivianarosino@hotmail.com

The spectral reflectance is used to study optical properties, value and translucency of the resins. The **aim** of this work was to study the influence of methos curing on the optical properties, value and translucency, of two types of resins both Nanoparticles and microhybrids comparing spectral reflectance mode between pre-curing and post-curing. **Methods:** 120 specimens resins were used divided into three groups with n=40 each one: G1: uncured, G2: halogen polymerized and G3: LED polymerized. Were studied two resins types, microhybrids and Nanoparticles in Translucent Enamel, Enamel A2, Enamel B2 and A3 Dentin. Analysis was performed Reflectance with "spectral Luminometer" (Spectra System Scan model PR 715, Photo Research). Datas were analyzed statistically. The analysis was performed Multilevel for two levels. Two models were performed for each group of resins for polymerized and unpolymerized. **Results.** The polymerization produced changes in the optical properties studied, value and translucency. Statistical analysis of the data showed that the variable color showed no significant difference $p > 0.721$, whereas the variable type resins and polymerization mode showed statistically significant differences, $p > 0.000$. **Conclusion** This study observed statistically significant changes in the optical properties of the resins (and translucency value) when compared before and after curing. This work was made in the Lighting Laboratory of the Faculty of Exact Sciences. UNT. Partially subsidized CIUNT

Key words: Reflectance, translucency, Resins microhybrids, Nanoparticles





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

173

COMPARATIVE STUDY OF STRESS DISTRIBUTION ON TEETH WITH DIFFERENT CAVITY PREPARATIONS RESTORED WITH CERAMIC INLAYS

Peralta GD, Spaccesi J*, Iaffar L, Plavnik LM, Piacenza AB.
Fundación Creo julietaspaccesi@outlook.com

Introduction: In this study its analyzed, by finite element analysis, the behavior of stress distribution in a tridimensional model of two superior premolars with different cavity preparation each, restored with ceramic inlays. **Objective:** To compare the distribution and strength of the tension generated by occlusion in restored premolars, in order to determinate the best cavity preparation design for ceramic inlays. **Methods:** two tridimensional models of maxillary second premolars, straight and vitals, were design using the 2007 Solidworks program. A cavity preparation was simulated in both teeth in order to receive a feldspathic ceramic restoration. One of the cavities was made with inner angles, peripheral margin line and a 100° shoulder. The other one was made rounded on these regions. To be able to watch the behavior of the strengths created, both models were submitted to a 10 kg vertical force towards the surface, on three different contact points, representing an occlusion. **Results:** finite element analysis showed higher stress concentration at the 100° angled regions while at rounded areas the tension distribution was better. **Conclusion:** the rounded angles cavity preparations produces a better stress distribution on ceramic inlays premolars restorations.

Key words: Finite element analysis, Premolars, Ceramic inlays

174

DIFFERENTIATION OF CANDIDA ALBICANS FROM CANDIDA DUBLINIENSIS ISOLATES FOR PHENOTYPICAL METHODS

Lamas NS, Fedelli L, Levin BC, Gonzalez MI, Molgatini SL.
FDepartment of Microbiology, School of Dentistry. University of Buenos Aires nslamas@hotmail.com.ar

Candida dubliniensis (Cd) is a pathogenic yeast that shares several phenotypical characteristics with *Candida albicans* (Ca), including its capacity to form germ tubes and chlamydo spores. **Objective:** Identify and differentiate Ca and Cd in oral isolates. **Methods:** 65 yeast strains were studied, isolated from oral mucosa of different patient groups, classified as Ca in the yeast stock collection 10 years ago. CHROMagar *Candida*® medium was used for typification, where all strains developed green colonies after 48 hours of incubation at 37°C. All strains studied demonstrated formation of germ tubes after 3 hours at 37°C and presence of pseudohyphal and chlamydo spores after 48 hours at 28°C in milk-Tween-80 agar. For differentiation between Ca and Cd, all yeast studied were initially grown for 48hs at 37°C on Sabouraud Glucose Agar (SGA) contained in petri dishes. A small portion of a single colony of each isolate was then aseptically removed and streaked over the surface of two plates, one of SGA and the other one Staib Agar (SA). SA Petri dishes were incubated at 30°C for 4 days and SGA at 45°C for 48hs. The appearance of the colonies on the plates was observed daily, both macroscopically and microscopically with objective X 10. Moreover, pieces of agar were cut out from the edge of the colonies for microscopic preparations by using objective X 40. Ca produced smooth edged colonies without chlamydo spores, unlike Cd, which produced colonies with pseudohyphal and terminal chlamydo spores. Ca only developed on 45°C SGA medium. As control for both species, reference strains ATCC 10231(Ca) y CD 36 (Cd) were used. **Results:** From all studied strains, only one from an HIV+ patient could be identified as Cd. **Conclusion:** The employed methods allow us to differentiate Cd from Ca in a simple, inexpensive and reliable way.

Key words: *Candida albicans*- *Candida dubliniensis*- Differentiation





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

175

TOOTHBRUSHING FEATURES INTERVENING ON BIOFILM REMOVAL IN SCHOOLCHILDREN.

Sorazabal A*, Rossi G, Ferrarini S, Ventura F, Tilke G, Bruno A, Marchi R, Scattone S, Volpone N, Diaz C, Salgado P, Klemonsks G, Squassi A. Cátedra Odontología Preventiva y Comunitaria, FOUBA. anasorazabal@hotmail.com

Aim: To identify toothbrushing features associated to the effectiveness of biofilm removal in schoolchildren with no previous hygiene training. **Methods:** On a sample of 948 schoolchildren(age 5-7 years, $\bar{x}=6,3\pm 0,67$), with parents' informed consent, eight calibrated dentists observed the following variables: toothbrush gripping, orientation of its active part towards the tooth; movement performed, surfaces involved; simultaneous approach on both jawbones and the inclusion of the six sextants during the procedure. Dental biofilm's level (O'Leary, 1972) was determined prior and after the brushing procedure, which was performed spontaneously by the children with no previous hygiene training. Cases in which pre-brushing biofilm level was above 75 percentile were selected (O'Leary > 81%; n=236). On these cases, reduction in biofilm levels was calculated. Square chi test was used in order to establish association between the observed variables and the reduction percentage. ROC curve technique was used in order to select a cut off value of the variables presenting the highest sensitivity and specificity. Sensitivity, specificity, negative predictive value, positive probability coefficient and Odds Ratio were calculated. **Results:** Among the analyzed variables, the variable inclusion of the six sextants showed association with biofilm reduction ($p<0,001$). For this variable, the cut off point obtained of biofilm reduction was 44.5 %, and the area below the curve was 0.75. A sensitivity of 77.6% and a specificity of 66% were obtained. The negative predictive value was 91.8%. Positive Probability coefficient was 2.3/1. The Odds Ratio was 6.6/1 (IC95% [3.2-13.8]). **Conclusion:** the inclusion of the six sextants is a determinant variable to reduce dental biofilm levels and should be emphasized as a relevant aspect of hygiene education.

Key words: Toothbrushing technique, Dental biofilm removal; Schoolchildren.

176

EFFECTIVENESS OF A SCHOOL PROGRAM ON CARIES INCIDENCE

Toral M, Rossi G, Sorazabal A, Barsanti A, Lorenzo C, Salgado P, Klemonsks G, Squassi A. Cátedra Odontología Preventiva y Comunitaria, FOUBA. marianatoral@live.com.ar

Aim: To compare the effectiveness of different intervention strategies in terms of caries incidence within a school program. **Methods:** On a population of 52 children (age 6-8 years, $\bar{x}= 7,16\pm 0,6$) who attend a public school located in the southern area of Buenos Aires City, with their parents' informed consent, two calibrated researchers performed a dental examination according to ICDAS II (Pitts, 2005) criteria. Every child received an intervention which included: daily supervised brushing with fluoride toothpaste; control of cariogenic infection determinants and an annual application of chlorhexidine / timol 1% varnish. Subsequently, schoolchildren were randomly allocated into two different groups according to the type of fluoride used (G1: FFA 1,23% gel G2: FNa 2,26% varnish). The students' distribution among the groups was balanced taking into account the presence of residual caries after treatment. As a result, four groups were established (G1A= FFA 1,23% without residual lesions; G1B= FFA 1,23% with residual lesions; G2A= FNa 5% without residual lesions; G2B= FNa 5% with residual lesions). After a two year period, in 25 children, who remained under the program, 1078 dental surfaces showing ICDAS code=0 (L=0) at baseline were evaluated and the presence of new lesions registered. Frequency distribution was calculated and the difference between groups was established using proportions test and chi square test. **Results:** In the whole population, 90,4% of the surfaces which showed L=0 at baseline remained under the same code (G1A: 92%; G1B: 89,2%; G2A: 91%; G2B: 89,7%); 4,35% showed lesion code =2 G1A: 5,5%; G1B: 6,6%; G2A: 4,5%; G2B: 2,1%); and 5,1% showed code ≥ 3 (G1A: 2,5%; G1B: 4,2%; G2A: 4,5%; G2B: 8,1%). No significant differences were observed among groups regarding proportion of new caries lesions ($p> 0,05$). **Conclusion:** The incidence of caries in a school program including a combination of therapeutic measures was not modified by the type of fluoride used or by the presence of residual caries lesions after dental treatment. UBANEX 2011.

Key words: Caries incidence, Preventive program, Schoolchildren.





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

177

INFECTION CONTROL IN RADIOLOGY PRACTICE IN DENTISTRY

Alonso Larrabure MP, Kummer MC, Granillo BA.

Microbiology and Parasitology Dept. Fac. of Dentistry. National University of Tucuman. Argentina.
maripia_pipi@hotmail.com

In daily dental practice, the making of intraoral radiographs is one of the most frequent procedures for its massive diagnostic application. During this procedure the operator is in contact with saliva and eventually with blood. If these fluids are not treated with the proper protocol, they are taken by the operator to the head ray of the equipment, X-ray cone, command button, leaded vest and even to the dental chair, contaminating surfaces with microorganisms that can remain viable for even 48 hours and thus lead to cross-infection. The **Aim** of this study was to perform a diagnostic of microbiological contamination in radiology in a dental care service and to create a protocol of the tasks (procedures) following biosafety standards and evaluate its implementation. **Methods:** the superficies sampled were: 1) X-ray Cone 2) head X-ray equipment 3) command button and 4) leaded vest. Samples were taken before and after following the protocol for the different tasks without disinfectants and then with different disinfectants: 1- Ayudin Desinfectant towel, 2- Lysoform (spray) 3- Sodium hypochlorite. In order to get the samples, the wet technique "3M Quick Swab" was used. After that, the samples were seeded into the AC 3M Petrifilm for a total aerobe count, which was done after 48 hours of having seeded the material. **Results:** The results of the two samples before and after following tasks' protocol on different surfaces (X-ray Cone, head ray of the equipment, command button and leaded vest) and the use on different disinfectant in CFU count was the following: 1) Initial sample without disinfectant (360, 26, 9, 2) 2) Ayudin Desinfectant towel (5,8,7,3) 3) Lysoform (spray) (10, 3, 3, 2) 4) Sodium hypochlorite (3, 4, 4, 0). The CFU counts decreased in all the procedures in which disinfectant was applied. There is no significant evidence on most of the sample surfaces in which the protocol task was followed before and after. **Conclusion:** It has been proved that all surfaces that were manipulated during the process of making a radiograph were highly contaminated and that the use of disinfectant on surfaces highly decreases such values. Work supported by the CIUNT.

Key words: Biosafety, Radiology, Cross infection

178

EFFECTIVENESS OF A SCHOOL PROGRAM ON CARIES STABILIZATION

Rossi G *, Toral M Sorazabal A, Barsanti A, Lorenzo C, Salgado P, Klemonskis G, Squassi A. Cátedra Odontología Preventiva y Comunitaria, FOUBA.
glerossi@yahoo.com.ar

Aim: To compare the effectiveness of different intervention strategies in terms of caries incidence within a school program. **Methods:** On a population of 52 children (age 6-8 years, $x = 7,16 \pm 0,6$) who attend a public school located in the southern area of Buenos Aires City, with their parents' informed consent, two calibrated researchers performed a dental examination according to ICDAS II (Pitts, 2005) criteria. Every child received an intervention which included: daily supervised brushing with fluoride toothpaste; control of cariogenic infection determinants and an annual application of chlorhexidine / timol 1% varnish. Subsequently, schoolchildren were randomly allocated into two different groups according to the type of fluoride used (G1: FFA 1,23% gel G2: FNa 2,26% varnish). The students' distribution among the groups was balanced taking into account the presence of residual caries lesions after treatment. As a result, four groups were established (G1A= FFA 1,23% without residual lesions; G1B= FFA 1,23% with residual lesions; G2A= FNa 5% without residual lesions; G2B= FNa 5% with residual lesions). After a two year period, in 25 children, who remained under the program, 277 dental surfaces (representing 20,44% of the total surfaces) showing active lesions (A=2) ICDAS code ≥ 1 A=2 at baseline were evaluated and the stabilization of lesions was registered. Frequency distribution was calculated and the difference among groups was established using proportions test and chi square test. **Results:** In the whole population, 54,9% of the surfaces presenting $L \geq 1$ (A=2) at baseline stabilized. (G1A: 47,5%; G1B: 38,5%; G2A: 68,5%; G2B: 58,6%). Significant statistical differences were found between G1A/G2A $\chi^2 7,4$ ($p = 0,024$) and G1B/G2B $\chi^2 7,04$ ($p = 0,027$). **Conclusion:** Fluoride varnish (FNa 5%) showed more effectiveness to stabilize active caries lesions than fluoride gel (FFA 1,23%), and tended to improve when combined with total inactivation of the mouth. UBANEX 2011.

Key words: Caries stabilization, Preventive program, Schoolchildren





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

179

THE USE OF CEMENT GLASS IONOMER IN PRIVATE PRACTICE OFFICE

Fernandes MA, Braga SX, Machado FI, Pereira LCG
Centro Universitário de Anápolis, UniEVANGÉLICA – Brasil .
luciausp@yahoo.com.br

Objective: To verify the use of glass ionomer cement (GIC) by dentists working in private offices in the city of Anapolis-GO. **Methods:** A questionnaire with eight questions, objective and subjective questions, was done in 2011. One hundred dentists agreed to participate in the study. Dentists remained with the questionnaire for a specified period, to choose the time and the place most convenient to answer them. Data were tabulated in a spreadsheet (Excel). Descriptive statistics was used and data were described in percentages. **Results:** Dentists who responded to the questionnaire, 44% were male and 56% female. Most professionals use the GIC as a pulp protection (38%) and as a provisional restorative material (31%). Most of them related that they would not use the GIC as permanent restorative material. The surface protection of GIC are made by 46% of professionals, 51% do not and 3% did not respond. The fluoride release and biocompatibility were identified by dentists as advantageous properties of this material. Most dentists (68%) are favorable of the use of cement for any patient, with no restriction. According to dentists, other professionals were not using GIC due to the lack of knowledge of the material and its use, difficulty in handling and application, high costs and unfavorable esthetics. **Conclusion:** Lining and provisional restoration were the indications of GIC most cited by dentists. Dentists use little the GIC as permanent restorative material to be not sure of its mechanical properties. They make no restriction in the use of this material in relation to the patient profile. According to dentists, other professionals not use GIC because the lack of knowledge of the cement and its properties. Supported by: PIBIC-UniEvangélica/CNPq n. 800479/2011-4.

Key words: Glass ionomer cement, Private office, Dentists

180

EVALUATION OF THE ORAL HEALTH STATUS OF SCHOOL-CHACO QUITILIPÍ

Di Lerna V, Amighini MC, Lagonegro S, Ridruejo L, Brusca MI, Grandinetti JA.
Universidad Abierta Interamericana.
violeta_dilernia@hotmail.com

The Universidad Abierta Interamericana, in conjunction with the Military Hospital Dr. Cosme Argerich, sent four dentists for dental treatment in the community Quitilipi, Chaco province. The aim of this study was to assess the health status and periodontal dental students. Aboriginal school 875, and rural school 545 -Chaco Quitilipi. **Methods:** Cross sectional study. It relieved tooth and periodontal status of the students present at each school (n = 49) between 5 and 16 years, were promptly grouping the primary dentition, mixed and permanent. Using DMFT / S; dmft / s, and Ramfjord Silness index. **Results.** Primary dentition (n = 8); dmft = 6.5 with a component d = 5.5 ; m = 0.75 ; f = 0.25. dmfts = 11.12 with a component is ds= 8.25; ms = 2.5 ;fs = 0.3. Silness=0 plaque index, =74, Ramfjord index= 0. Mixed dentition (n = 28); Dmft = 3.77 with a component d = 2.82, m = 0.6, f = 0.35. Dmfts = 9.34 with a component ds = 5.57 ms = 3.17, fs = 0.6. DMFT = 0.78 with a component. D = 0.71, M = 0.3 F = 0.07. DMFTS = 7.21 with a component of Ds = 5.61, Ms = 1.53, Fs = 0.07. Silness plaque index 1.49; Ramfjord Index 0.46. Permanent dentition (n = 13); DMFT = 4.06 with a component D = 3.69, M = 0.3, F = 0.07. DMFS = 7.21 with a component Ds = 5.61, Ms = 1.53, Fs = 0.07. Indices of Silness 1.18; Ramfjord Index 0.76. **Conclusion:** The study population show cariogenic risk, future visits to primary care and community foresee nutritional counseling with a team for this purpose.

Key words: Status, Periodontal, Dental , Quitilipi, Chaco





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

181

ATRAUMATIC TREATMENT IN PUBLIC HEALTH SERVICE IN ANAPOLIS-GO / BRAZIL

Rodrigues EC, Pereira DF, Caldas JB, Barbosa LC, Pereira LCG.
Centro Universitário de Anápolis, UniEVANGÉLICA – Brasil.
luciausp@yahoo.com.br

Objective: To verify the use of atraumatic restorative treatment (ART) in the public health service in the city of Anapolis-GO, analyzing the knowledge, acceptance and perceptions of dentists about the treatment. **Methods:** A questionnaire with 12 questions objective and subjective was applied in 2011. One hundred and twenty questionnaires were taken in 51 public health institutions where had dental care. Dentists remained with the questionnaire for a specified period, to choose the time and place most convenient to answer them. Data were tabulated in a spreadsheet (Excel). Descriptive statistics was used and data were described in percentages. **Results:** The study covered 75.7% of dentists linked to public health of the city. One hundred and six dentists answered to the questionnaire. Most dentists (96%) related heard about ART. Only 33.96% professionals reported never made the ART, 16.04% intend to use. The most of dentists (90.6%) answered correctly more than 50% of the questions about the ART, and within these, 24 (22.65%) achieved 100% correct answers. About the knowledge of ART, questions that relate to the instrument used, the indication of patients and type of dentition in which treatment can be applied, were the most correct answers. Most professionals (72.64%) agree with the use of ART in the public service. More than half of dentists (64%) believe in the efficacy of ART in public health, while 28.3% have doubt and only 5.7% do not believe. **Conclusion:** The majority of dental public health linked to Anapolis-GO has a positive acceptance of the ART. Despite knowledge of the ART have been satisfactory, strategies should be adopted for the relevant aspects of this procedure could be discussed to ensure greater professional job security in relation to the philosophy of maximum intervention and prevention, which this technique is based. Supported by: PIBIC-UniEvangélica/CNPq n. 800479/2011-4.

Key words: Atraumatic restorative treatment, Public healthy, Dentists

182

EFFECT OF BISPHOSPHONATE ON BONE GROWTH IN EXPERIMENTAL ANIMALS

Oyhanart SR*, Escudero ND, Mandalunis PM.
Department of Histology and Embriology, Faculty of Dentistry, University of Buenos Aires.
sharito_89@hotmail.com

Bisphosphonates (BPs) are drugs that inhibit bone resorption and are frequently used to treat osteoporosis in adults. The clinical use of these drugs in children and adolescents is recommended in cases of idiopathic juvenile osteoporosis and osteogenesis imperfecta. Given that the effect of BPs on bone growth has not been clarified, the **aim** of this work was to evaluate the effect of alendronate (ALN) in growing animals. **Methods:** Male Wistar rats of 30 days of age were divided into two groups: Group Sham(Sh) n=4, animals received vehicle and Group ALN n=4, animals were i.p. injected with 0.3 mg/kg/week of ALN during 8 weeks. Euthanasia, in both groups, was performed on week 9 and hemimandibles (HM), tibiae (T) and femurs (F) were resected and fixed in buffer formaldehyde. T and F were weighed using a precision balance and measured using a Vernier caliper and HM were radiographed. T were processed histologically in order to obtain sections stained with H&E. Using microphotographs, thickness of growth plate cartilage (GPC.Th)(μm), hypertrophic zone (HpZ.Th)(μm) and resting and proliferative zones (R&PZ.Th)(μm) were measured. Digitalized RX were using to evaluate parameters in hemimandible according to Eratalay's method. The results were analyzed using Student t test. **Results** showed significant differences in tibiae and femurs length T(mm): Sh 39.9 \pm 0.6, ALN 37.6 \pm 0.4, p<0.001 and F(mm): Sh 34.6 \pm 0.7, ALN 33.6 \pm 0.4 p<0.05. Measurements of growth plate cartilage revealed significant differences in GPC.Th (μm): Sh 450.44 \pm 53.97, ALN 367.50 \pm 29.64 p<0.05. In hemimandibles, significant differences were found in one of the parameters related to longitudinal mandible growth (mm): Sh 25.1 \pm 0.15, ALN 24.68 \pm 0.31 p<0.05. **Conclusion:** Results of the present work reveal that alendronate inhibits longitudinal growth in long bones as well as the growing in relation to mandibular condylar cartilage. UBACyT 20020090100210 4.

Key words: Bisphosphonates - histomorphometry - bone growth





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

183

STUDY OF ISOMETRY OF THE CANINE LOWER INTRA-ORAL RADIOGRAPHS

Vazquez DJ
Cátedra de Radiología Facultad de Odontología UBA.
jv983@hotmail.com

Objective: The objective of the study is to determine the minimum distance between the lower canine and radiological focus for increased radiographic isometry. **Methods:** The operator conducted in a toothed jaw model a Groove by vestibular to expose the apex of the canine, was thoroughly introduced barium sulfate in the apex, it was useful as a radiopaque element to perform measurements on images by two different operators, these were made from the cusp of the canine to the apex. Later were made for the radiographic taking with jigs and paralelizaron films with the tooth to radiograph, placed the focus of the team x-ray at a distance of 50 centimetres with angulation both vertical and horizontal zero degrees and he was nine shots every 2 cm to 65 cm. Measurements was carried out with a caliber by two different observers in different times. **Results:** Were 9 x-ray shots of the canine lower length for the number 1 operator is 19 mm and for the operator 2 is 19.1 mm, the first of outlets was carried out at a distance of 50 centimetres in the radiographic measurement was obtained a magnification of that root, operator number 1 was 20.1 mm measurement and number 2 was 20.2 mm. The remaining shots were made to 52, 54, 56, 58, 60, 62, 64 and 65 cm. The two observers agreed the 62 centimeters more isometry of the canine image was obtained, this was 19.5 mm, this same measure was obtained at 64 and 65 centimeters of radiographic focus distance of the canine lower. The analysis of variance was performed and found significant differences between the distances and there is no significant difference between the two operators. **Conclusion:** According to this study failed to verify that the magnification of the image projected radiograph decreases according to the distance and 62 inches is the minimum distance that gets more isometry of the canine lower in a conventional intraoral radiographic image.

Key words: Study- isometry- canine - intra-oral radiographs

184

USING THE PANORAMIC RADIOGRAPH TO DETERMINE THE AGE OF APICAL CLOSURE IN FIRST PERMANENT MOLARS IN BUENOS AIRES.

Vazquez DJ *, Carbajal EE, Hecht P, Ramirez JM, Ibero JN, Brusca MI, Carballo VA
Cátedra de Radiología Facultad de Odontología UBA. jv983@hotmail.com

Objective: The objective of this study is to use the information provided by panoramic radiography to determine the age at which apical closure occurs in the first molars in resident population of Buenos Aires. **Methods:** We randomly selected 100 panoramic radiographs in patients 7-10 years of age. The first permanent molars were grouped by age, gender and right or left side. Significance levels were determined by analysis of variance to compare the frequency of gender and age. The significance level considered was $p < 0.05$. The three evaluators of panoramic radiographs were calibrated. **Results:** There were 100 panoramic radiographs. In female patients 7 years 11% of first molars had closed apex on both sides, while in the male did not observe any case with apical closure on both sides. At age 8 were observed that were closed apices in females 14.29% left, on the right by 7.14%, in males 13.33% left and the right by 20%. At age 9 were closed apices in females 23.53% left, on the right at 29.41%, the male left and right by 25%. At age 10 were closed apices in females by 70% left, on the right by 80%, in males 54.55% left and right in a 63.64%. Statistical studies were performed. According to this study it was found that of the three factors under study (position, gender, age) presents only age differences significant at $p = 0.05$. **Conclusion:** No differences detected between positions and between sexes and also confirms that apical closure usually occurs after the age of 9 observing differences in the literature (apical closure occurs first molar at age 9).

Key words: panoramic radiograph- apical closure- first permanent molars





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

185

EFFECTIVENESS OF TWO PROTOCOLS FOR USE OF GLASS IONOMER CEMENT.

Capuano C, Toral M, Furci N, Squassi A

Department of Preventive and Community Dentistry, School of Dentistry, University of Buenos Aires.
Institute for Public Health Reserch. charlycapuano@hotmail.com

Objective: to compare the efficiency of two protocols using GIC with the application of remineralizing agents as pretreatment of dentin caries in scholars from rural regions. **Methods:** over a population of 56 preschool children ($5,34 \pm 0,4$) it was done a) medical and dental history b) analysis of dentin caries in primary teeth (extension, depth, proximal box). The population was divided into two groups according to the school they attended. In group 1: the treatment of dentin decays without symptoms was fulfilled by the removing of the necrotic and infected dentin with handy instruments and filling the cavity with Glass Ionomer Cement. In group 2: the treatment consisted of the removal of the necrotic and infected dentin with manual instruments and filling of the cavity with G.I.C (Ketac Molar®) previous application of silver fluoride to 38%(Fluorplat®) in floor and walls of the cavities. The cavities were analyzed at 12, 24 and 36 months taking note of the restoration condition in terms to Ryge norms. They were SATISFACTORY with a rating alpha and bravo and NO ACCEPTABLE with a rating charlie and delta and according to the codes referred to surface and colour anatomical form and marginal integrity. The statistical process was performed by means of SPSS 11,5; frequency distribution was performed and difference between groups was done using proportion test and chi square test. **Results:** In group 1: at 12 months, a 46% showed acceptable filling test. At 24 months, a 52% showed acceptable filling test. At 36 months, a 36% showed acceptable filling test. In group 2: At 12 months, a 73% of acceptable restorations was observed. At 24 months, a 52% showed acceptable filling test. At 36 months, a 40 % showed acceptable filling test. **Conclusion:** The use of silver fluoride to 38% (Fluorplat®) solution as pretreatment in cavities before de use of GIC was associated with better results according with the evaluative system employed.

Key words: rural program - Glass Ionomer – remineralizing agents

186

DENTIN CARIES STABILIZATION IN SCHOOL CHILDREN FROM RURAL REGIONS.

Capuano C, Fernández C, Torres M, Masoli C

Department of Preventive and Community Dentistry, School of Dentistry, University of Buenos Aires.
Institute for Public Health Reserch. cmasoli@hotmail.com

OBJETIVE: To compare the effectiveness of two protocols implementing remineralizing agents in terms of stabilization of dentin caries in scholars from rural regions. **MATERIALS AND METHOD:** Over a population of 85 children (aged $5,2 \pm 0,4$) was done: a) medical and dental history; b) analysis of dentin caries cavities in primary teeth (extension, depth and proximal box).The population was divided into two groups according to the school they attended. In Group 1 the treatment of dentin caries, without symtoms was carried out by the removal of necrotic and infected dentin with handy instruments, conformation of expulsive cavities with rotary instruments and the application of silver fluoride to 38% (Fluorplat®). In group 2 the treatment consisted of cleaning the dental plaque with a small brush and the application of silver fluoride 38% (Fluorplat®). Cavities were analyzed 12, 24 and 36 months observing the degree of stabilization in floor and walls (size, colour brightness and shape). In cases where no stabilization was noted in the control periods the therapeutic proceeding was repeated. Statistical development was done by means of SPSS 11,5 the frequency distribution was fulfilled and the difference between groups was established using proportion test and chi square test. **Results:** Group 1: at 12 months, a 54% of stabilized cavities were shown. At 24 months, a 69% of stabilized cavities were shown. At 36 months a 67% of stabilized cavities were shown. Group2: at 12 months, a 44% of stabilized cavities were shown. At 24 months a 52% of stabilized cavities were shown. At 36 months a 40% of stabilized cavities were shown. After one year no important association between the stabilization of the caries process and the numbers of surfaces involved at first ($p > 0,005$) was noted. **Conclusion:** In both protocols the stabilization of dentin caries was observed. UBACYT 200620100100022.

Key words: program, silver fluoride, remineralizing agents





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

187

MODULUS OF ELASTICITY AND FLEXURAL STRENGTH OF FLUID AND CONDENSABLE RESINS.

Lutri P., Mirotti G., Kraemer E. Caballero A. Crohare L. Sezin M.
Operative Dentistry I A. Department of Buccal Rehabilitation. ABO.
paolalutri@hotmail.com

Objective: To compare the modulus of elasticity and flexural strength of condensable and fluid composites resins at 24 hours and 30 days. **Methods:** 40 samples were prepared by filling a rigid mold of 25 mm x 2 mm x 2 mm with resins of high and low density and light cured for 20 seconds on each side with one LED unit (Optilux LED). They were divided into 5 groups of 8 samples each one: Group 1: Wave Flow (SDI), Group 2: Brilliant Flow (Coltène), Group 3: Filtek Z350 XT (3M ESPE), Group 4: Rok (SDI), Group 5: Filtek P60 (3M ESPE). Four samples of each group were kept for 24 hours and the remaining were kept for 30 days in aqueous medium at 37 ° C + / -1 ° C. The tests were performed with a universal testing machine for tensile and compression head whose speed was 1 mm / min by applying a load testing station for three-point bending until fracture free ends. Data were submitted to Kruskal Wallis and Mann Whitney. **Results:** The average values of the modulus of elasticity in GPa at 24 hours were higher in group 5 (6.5) followed by group 4 (2.9), group 3 (2.3), group 1 (1.8), group 2 (1.5). 30-day values were higher in group 5 (6.8) followed by group 3 (3.3), group 4 (2.7), group 2 (2.5), group 1 (2, 2). The flexural strength in MPa after 24 hours was higher in Group 5 (111) followed by group 3 (70), group 1 (68), group 4 (64), group 2 (49). 30 days to greater values of flexural strength were in Group 5 (120) followed by group 3 (86), group 1 (79), group 2 (69), group 4 (60). Testing of modulus elasticity and flexural strength showed significant differences between group 5 and the other groups at 24 hours and 30 days (p <0.05). **Conclusion:** Under the conditions of this study, results of modulus of elasticity and flexural strength showed disparate values between condensable and fluid resins.

Key words: Modulus of elasticity. Flexural strength. Condensable composites. Fluid Composites

188

IN SITU SETTING CALCIUM SULFATE ENRICHED WITH MINERALS BARRIER MEMBRANE FOR BONE REGENERATION. COMPARATIVE STUDY FOR THE TREATMENT OF BONE DEFECTS WITH OR WITHOUT PARTICLES OF THE SAME BIOMATERIAL. LOPEZ M.A. *; LUCHETTI C.G.; AYALA M; BAEZ A.; CARBONE C.; KITRILAKIS A.E. Master in Oral Implantology Program. School of Dentistry. National University of La Plata. Argentina
marianolopez_bb@hotmail.com

Objective: To evaluate the ability to produce bone regeneration of calcium sulfate enriched with minerals in the form of particles alone, or covered with an in situ setting barrier membrane of the same material, and to evaluate the performance of this membrane in bone defects without grafting. **Methods:** Medical grade calcium sulfate and bone minerals were used. Particles were created by setting the calcium sulfate enriched with minerals powder with sterile saline, and then the material was broken into particles. The same powder was used to create the membrane but the setting was made in situ covering the defect. Critical size defects of 3 x 3 x 9 mm were created on the femur of 40 Wistar rats, SPF, of 16 weeks of age and 500 grams of weight, and divided in 4 groups. Group 1 was treated only with calcium sulfate particles and minerals, Group 2 with calcium sulfate particles and minerals covered with an in situ setting membrane of the same material, Group 3 only with an in situ setting membrane without graft, and Group 4 received no treatment (control). Samples were collected at 30 days and were evaluated histologically. **Results:** Microscopically, groups 1 and 2 showed a complete regeneration of the defect, with trabecular formation of variable thickness, and good interconnectivity between them. Group 3 showed a complete regeneration of the defect but with an apparent higher bone density and more homogenous characteristics respect the original limits of the defect. Group 4 showed no regeneration, leaving a large residual cavity. **Conclusion:** The three evaluated treatment forms have demonstrated the ability to facilitate the bone regeneration of a critical sized defect. The in situ setting barrier membrane without graft seemed to provide better benefits regarding the regenerated bone quality.

Key words: regeneracion osea- sustitutos sinteticos- sulfato de calcio





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

189

CONTAMINATING MICROORGANISMS IN THE ORAL MUCOSA OF PRESCHOOL AND SCHOOL CHILDREN.

Adler I., Harada L, Lence A, Muiño A, Labbrozzi M, Diaz M, Scalia G., Turon P., Serenellini MP*, Brune E., Aguas S. Oral Medicine Department of the University of Buenos Aires. liadler@intramed.net

Oral mucosa of children can be affected by viral, bacterial and mycological infection. A variety of treatments exist that don't match with their etiology and evolution. The diagnosis must be supported by clinical examination and etiology confirmation. The accurate laboratory method remains being culture. **Objective:** To identify opportunistic infections in children in a vulnerable community (lack of potable water, poor housing, high rate of population without study etc), based on clinical and microbiological diagnostic criteria. **MATERIAL and METHOD:** 5 teachers and 15 trained students of the sixth year of the Faculty of Dentistry, UBA attended the district Cildañez and carried out check up and swab of the posterior dorsum of the tongue of schoolchildren, with hypertrophy of filiform papillae, for the study of infectious microorganisms. The samples were placed in sterile special transportation (Stuart) and sent to the microbiology laboratory for direct examination with Gram stain, mycological culture (Chloramphenicol Agar-Saboreau) and bacterial culture (agar plates), species identification, isolation and antibiotic. **Results:** We studied 122 children, 61 preschool and 61 schoolchildren, 45% (55/122) were female. In the preschool population ages were between 3 and 6 years. In the school population ages ranged from 11 to 15 years. Bacterial and fungal infections were prevalent in children of 4 years old. We highlight the yeast infection. In 42% of cases coexisted fungal and bacterial infections. Bacterial and fungal infections occurred at similar rates in all age groups, with no significant differences ($P < 0.05$). We highlight fungal infections caused by *Candida*, but 19% (5/26) were produced by an emerging yeast called *Rhodotorula rubra*. This group of fungi, belonging to the family Cryptococcaceae, is widely distributed in the environment (water, soil, plants). This fungus can produce opportunistic localized such as endophthalmitis and peritonitis and generalized infections such as endocarditis and fungemia, being resistant to fluconazole and sensitive to amphotericin B. **Conclusion:** Our results estimate the importance of arriving at accurate diagnosis before implementing inadequate therapeutic, since these clinical frames are clinically compatible with Candidiasis.

Key words: Candidiasis, culture, *Rhodotorula*

190

ORAL MICROBIAL INFECTIONS IN ADULTS.

Muiño A, Harada L, Lence A *, Labbrozzi M, Diaz M, Turon P., G. Scalia, E. Brune, S. Waters, I. Adler. Oral Medicine Department of the University of Buenos Aires. liadler@intramed.net

The widespread use of prophylactic and therapeutic antimicrobial regimens have changed infectious characteristics of the oral cavity. In many health centers, patients are diagnosed with clinical candidiasis and they receive expensive and unnecessary antifungal treatments. Gram-positive organisms, including *Enterococcus* and *Streptococcus viridans*, are related to systemic infection with oral origin. Gram-negative pathogens, such as *Pseudomonas aeruginosa*, *Neisseria* species and *Escherichia coli* among others are also observed. **Objective:** The aim of this study was to estimate the prevalence of fungal and / or bacterial infection present in patients who attended to the Oral Medicine Department with swelling of the oral mucosa, arriving to diagnosis with a clinical and stomatological criterium. **MATERIAL AND METHOD:** A descriptive, observational and cross sectional study. The study population was composed of 140 subjects who were included in the inclusion-exclusion criteria. 68.6% (98/140) were females and 31.4% (44/140) were men. Ages were between 17 and 91 years and the average was 57.68 (+ / - 1.304 GB). All subjects underwent curettage of oral mucosal lesions. Samples were transported in sterile Stuart tubes and sent to microbiology service. Direct study was carried out with Gram stain, mycological culture (Agar Saboreau-Chloramphenicol), bacterial culture (agar plates). **Results:** The detection of opportunistic microorganisms estimated that 56% of the subjects (78/140) had fungal infection, *Candida albicans* represented the 87% (68/78), *Candida krusei* 10.5% (8/78) and *Candida tropicalis* 2.5% (2/78). Bacterial infections were present in 88.5% (121/140), *Streptococcus viridans* prevailed 90% (110/121), *Klebsiella* 6.5% (8/121) with 2.5% (3/121) *Staphylococcus aureus*, *Pseudomonas*, *Neisseria* and *Streptococcus pyogenes* B hemolytic. Other bacteria infecting were the *Escherichia coli* 0.8%, *Acinetobacter* 0.8% *Serratia marcescens* 0.8%. In 55% occurred concomitantly bacterial and fungal infection, with a Pearson X^2 : 35.42 / P : 0.753. **Conclusion:** Our results highlight the importance of using clinical and microbiological diagnostic criteria in order to arrive at an accurate diagnosis in to institute appropriate treatment because fungal infections were not the only cause.

Key words: culture, clinical and microbiological diagnostic criteria





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

191

TETRACALCIUM PHOSPHATE CEMENT AS A GRAFT MATERIAL IN GUIDED BONE REGENERATION. PRELIMINARY REPORT.

BAEZ AN, LUCHETTI CG, AYALA M, LOPEZ MA, CARBONE C, KITRILAKIS AE.. Postgraduate Program in Oral Implantology. School of Dentistry. National University of La Plata. Argentina. baezadolfo@hotmail.com

Objective: To study and to evaluate the performance of tetracalcium phosphate as bone graft material. **Methods:** 10 Fisher 344 (F344 / N) male rats were used, originated from the National Institute of Health - USA, and produced at the Biotery of the Faculty of Veterinary Sciences, UNLP. All were specific pathogen free (SPF), 16 weeks old and 500 grams of weigh. All were operated under general anesthesia with ketamine / xylazine 75 mg / kg + 10 mg / kg intramuscularly. A 3 mm wide and 9 mm long and 3 mm depth perforation was performed in the femur to simulate a bone defect. After that, tetracalcium phosphate cement was placed on the defect. This biomaterial is presented in powder / liquid and mixed prior to use. Finally, a suture in layers was performed. After 30 days the animals were sacrificed and the femurs excised for histological preparations. **Results:** The use of the biomaterial did not present complications, and the handling was very simple. Once the mixture is done, the consistency is cream-like, very similar to the one of a dental plaster. The setting is fast, occurring approximately in 3 minutes, and once in place, it maintains it shape perfectly. After the samples were taken, in the macroscopic views, it was shown an almost complete regeneration of the defect. Histologically, there was new bone formation, of more mature characteristics at the bottom and more immature at the top. **Conclusion:** This test allowed us to make a preliminary assessment of the characteristics of tetracalcium phosphate and its possible use as graft material. According to the observations, showing new bone formation, this biomaterial could serve as an additional option to treat bone defects, although more research is needed.

Key words: bone regeneration calcium phosphate





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

SUBJECT INDEX

action research	48
acute myocardial infarction	64
adaptation	28
addictions	25
adhesion	56
adhesion test	164
adolescents	82
adoption therapeutic	131
adrenoceptors	80
age	145
age distribution	126
aggregatibacter actinomycetemcomitans	137
aggressive periodontitis	155
alcohol	38
alcoholic-cirrhotic	43
alveolar bone loss	108
alveolar bone resorption	68
analgesic	83
andropause	125
angular measurements	49
animal model growth retardation	44
antibiotics	83
antiseptic	73
apex locator	79
apical closure	184
apical constriction	87
apical limit	124
apoptosis	80
apoptosis	71
applicant	163
arginine	166
assessment	151
atpase	147
atraumatic restorative treatment	181
auto-antibodies	53
barotrauma	39
basic and clinical integration	11
bioaerosol contamination	144
biocompatibility	102
bioethics	35
biofilm	128
biofilm production	1
biological control	136
biomarkers	89
biopsies	86
biosafety	24, 136, 144, 177
bisphosphonates	84, 182
bleaching	166
b-learning	27
BMT	12
body growth	26
bone	111
bone age	112
bone biomechanical performance	44
bone biomechanics	5, 110
bone growth	182
bone histomorphometry	127
bone particules	101
bone quality	110, 111
bone regeneration	90, 188, 191

bone remodeling	61
bone repair	60, 161
border of the tongue	91
breast cancer	16
bubbles	160
buccal mucosa	93
Ca2 +	147
ca-atpase	50, 113
calbindin	51
calcium absorption	71
calcium hydroxide	90
calcium phosphate	191
calcium sulfate	188
calcium transport	113
candida	1, 2, 7, 19, 42, 81
candida albicans	174
candida dubliniensis	174
candida spp	141
candidiasis	189
canine	183
carbonic anhydrase ix	134
cardiac disease	122
cardiovascular surgery	65, 67
career choice	104
caries	9, 141
caries experience	29
caries incidence	176
caries risk	97
caries stabilization	178
cariogenic microorganisms	97, 115
carious lesion	164
carpal tunnel syndrome	123
carrageenan	147
carticaine clorhidato 4%	54
cartilage	33
casein	133
casein phosphopeptide	166
celiac	23
cell proliferation	120
cell viability	98
ceramic inlays	173
cervical lesions	130
cervical vertebrae	112
chemotherapy	12
child sexual abuse	93
children	66, 52
chlorhexidine	76
cholesterol	138
chronic diabetes	41
chronic periodontitis	53, 168
chronic renal insufficiency	97
CINO	151
clinical and microbiological diagnostic criteria	190
clinical attachment loss	82
clinical diagnosis	86
collagen membrane	102
communication	85
competences	35
composite	169, 171





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

composite resins	154, 165
computer	78
concordance	86
condensable composites	187
connexin 43	109
consumption of medicine	121
contraceptive	17
contraceptives	19
controls	62
córdoba, R.A.	104
corrosion	31, 32, 142
cortical bone	111
c-reactive protein	64
cross infection	177
crown restoration	62
culture	189, 190
cyclophosphamide	10
cytology	86
deep dentine	28
dental	34, 180
dental aesthetic index	100
dental age	112
dental biofilm removal	175
dental care	22
dental caries	106, 118
dental distraccion	150
dental implants	47, 92
dental plaque	138
dental pulp	109, 159
dental students	104
dental students training	11
dentinal tubules	99
dentinogenesis	143
dentistry	22
dentistry education	35
dentists	179, 181
derivation	74
diagnostic	70
differentiation	45, 174
diffusion	47
disinfection	88
distal movement	150
distilled water	99
DMFS	30
DMFT 12	9
DPSC	45
drugs	83
E. faecalis	128
ECOHIS	30
EDTAC	71, 72
effectiveness protocol	117
effectiviness	107
electron	101
endocannabinoid system and prostaglandin E2	57
endodontic sealers	160
endodontic treatment	54
endodontics	62
endothelial function	46, 69
eosinophilic ratio	43
epidemiology	9, 82, 100, 124, 148
erosion	116
error in dentistry	4
eruption	36

evaluation	131
exfoliative cytology	32, 93
exoenzymes	2
experimental design	127
experimental endodontics	51
experimental orthodontics	61
experimental periodontitis	6
fear	34
fears	22
female wistar rats	127
fiber post	158
fiber posts	37
film thickness	160
final examination	15
final test	14
finite element analysis	173
first permanent molars	184
first year university students	85
flexible module	154, 165
flexural strength	187
flowable composite	169
fluid composites	187
fluorescence	47
fluoride	76, 133
fluorosis	109
food	16
founlp	78
frequency	74
frequently consumed beverages	116
full mouth disinfection	46
fungus	7
gingiva	31
glass ionomer	28, 185
glass ionomer cement	179
glass ionomer cements	58, 98
glycogen	10, 13
grossman cement	73
growth	110
guided tissue regeneration	131
gutta percha cones	140
H.I.V.	94
haart	167
halogen light	170
health basic	105
health factors	105
health promotion contextualized	48
healthy enamel	130
healthy feeding	48
heart disease	53
heat-activated arcs	162
hematopoietic bone marrow	161
hexavalent chromium	26
hipercholesterolemia	68
histology	159
histomorphometry	5, 182
histopathological diagnosis	86
HIV+	167
homogeneity	124
human gingival fibroblast	98
human oral mucosa	134
human serum	139
hydrophobicity	1
hypercholesterolemia	60
hypofunction	157





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

hyposialia	59
hypothyroidism	36
hypoxemia	110
hypoxia	5, 6
IgAs	155
image analysis	92
immunohistochemistry	119
immunosuppression	94
impact	163
implants	142
in vitro demineralization	75
infarction	80
infection control	144
inflammatory markers	38
inorganic components	130
insertion technique	171
institutional dental services	132
insulin resistance	66
interradicular bone	41, 157
intracanal	99
intra-oral radiographs	183
invasion	42
irreversible pulpitis	54
irrigants	40
irrigating solutions	140
ischemic cardiopathy	67
isometry	183
isthmus	145
lateral condensation	146
lead	6
learning	3, 146
led	170
L-forms	135
lidocaine	120
ligatura	18
light-cured	171
liner	169
LPS	38
lysosomal disease	152
macrophages	142
maisto paste	73
maleic acid	71, 72
mandibular biomechanics	103
mandibular molar	145
masseter muscle	147
masticatory muscles	50
mechanical properties	158
melatonin	71, 108
melphalan	13
menadione	71
metabolic disease	152
metallic implants	60
methyl methacrylate	159
microhardness	170
microorganisms	18
microparticles	31
modulus of elasticity	187
molecular biology	168
mood	163
morphometry	55
mycoplasma	138, 139
nanoidentification	135
nanoparticles	31, 172
nanotechnology	156

NiTiCu	61
nitinol	137, 139
nitinol arcs	162
nutrition	111
nutritional status	141, 153
obesity	21
obturation	124
occlusal loading	103
occupational hazard	123
OHIP49	29
oral cytology	43
oral disorders	66
oral exfoliative cytology	91
oral health status	77
oral histoplasmosis	94
oral lesions	126
oral manifestations	152
oral metastasis	119
oral mucosa in smokers	91
oral piercings	32
orchiectomy	125
orofacial pain	
orthodontic brackets	18
orthodontics	117
osteonecrosis	84
osteopenia	41, 125
oxidative stress	71
panoramic radiograph	184
parotid	12
parotid	13
pathology	74
patient safety	4
peer interaction	96
peer learning	95
peptide sequence	50
perception	30
peri-implant groove	8
periodontal	180
periodontal disease	17, 21, 23, 67, 114, 122, 148
periodontal maintenance	148
periodontics	46
periodontics disease	69
periodontitis	57, 68, 70, 80, 108, 135, 137
periodontopathic microorganisms	167
ph	20
pharmacology	14, 15
pharmacovigilance	121
physical	151
piercing	7
platelet-rich plasma	143
pneumonia	65
polished	170
polymers	156
porous polyethylene	161
porphyromonas	114
post-extraction socket	90
potentially malignant lesions	134
pregnant women	77
premolars	173
preparing the cervical third	87
preschoolers	106, 153
prescription	15
prevalence	52, 81, 116, 118, 149
prevalence of malocclusion	100





**45th Annual Meeting of the Argentine Society for Dental Research.
Argentine Division of the International Association for Dental Research.
November 8-10, 2012. Los Cocos, Córdoba, Argentina**

preventive dentistry	105
preventive program	176, 178
prevotella	114
prilocaine	113
private office	179
probe x	101
progestagens	17, 19
program	186
protein kinase c	120
public health	181
punch tissue sample	59
quality of life	29, 30, 77, 106
quantification	92
quitilipi-chaco	180
radiographic images	49
radiographs	92
radiography	129
radiology	177
rating scale	34
ray microanalysis	101
real seal	73
recurrence	89
red complex	168
reflectance	172
regeneration	45, 101
regenerative medicine	33
remineralization	133
remineralizers	166
remineralizing agents	185, 186
resins	170
resins microhybrids	172
resistance to flexion	154, 165
rhodotorula	189
risk factors	25
root canal obturation	129
root canals	88
rural program	185
s. mutans	76
saliva	64, 70
salivary α -amylase	12
salivary alpha amylase	13
salivary flow rate	153
salivary gland	89
salivary glands	57
salivary peroxidase	155
sarcoplasmic reticulum	50
scaffolds	33
scanning electron microscopy	75
school	118
school fluoride programs	107
school-age	118
schoolchildren	175, 176, 178
scuba diver	39
sealer 26	73
self etching cements	56
self-etch cements	37
SEM	40, 71, 72, 128, 140
semester	14
shrinkage stress	169, 171
silver fluoride	186
synthetic substitutes	188

skin	55
smear layer	40, 71, 72
snuff smoke exposure	149
social economic status	106, 107
socioeconomic level	9
sodium hypochlorite	88
sports	20
status	180
sterilization	117
sterilization process	136
stomatological lesions	2
strategies	3
streptococcus mutans	20
streptococcus mutans group	164
student	78
students	3, 24, 25
study	183
study frequency performance	132
study of medicine use	121
subgingival biofilm	114
submandibular glands	10
submandibulectomy	103
super elasticity	162
supplementation	20
survey	24
tactile detection	87
tamoxifen	16
teacher	78
temporomandibular disorders	52
temporomandibular joint	63
tensile strength	37
third molar	42
tibiae	26
tics	85
tissue engineering	102
tissue repair	59
titanium	31, 47, 142
tobacco smoking	149
tooth maturation	36
toothbrushing technique	175
tooth-extraction	59
translucency	172
trigeminal	51
type II diabetes	43
university teaching	27
urban rural	118
use in daily practice	58
value	166
vascularization	55
ventilator	65
virtual environments	27
voids	146
white spot lesion	75
working length	79
xenophyllum poposum	115
yeast	8
yeast association	8

