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Abstracts

Somatostatin Receptors in Human Dental Pulp: Literature Review

D. Christakoudi[1], G. Stefanopoulos[1], G. Karayannopoulou[2], K. Lyroudia[3]
[1]Postgraduate, School of Dentistry, Aristotle University
[2]Department of Pathology, School of Medicine, Aristotle University
[3]Department of Endodontology, School of Dentistry, Aristotle University, Thessaloniki, Greece

SUMMARY

Somatostatin (SST) is a neuroendocrine regulatory peptide that exerts a wide range of biological and physiological activities in various human tissues. The effects of SST are mediated by a family of 5 transmembrane G-protein coupled receptors (SSTR) localized on the surface of responsive cells. To date, 5 distinct SSTR subtypes have been cloned and detected at varying levels in human and rodent tissues, with different but overlapping patterns of expression. However, little is known about the expression and function of SSTR in the human pulp tissue.

In this paper we present a summary of current literature on SST actions and SSTR biology, with particular emphasis on issues concerning its receptors in the dental pulp.

Keywords: Somatostatin Receptors; Dental Pulp, nerve fibres; Endothelial Cells

Family Violence and Child Abuse

Ch. Stavrianos[1], **L. Zouloumis**[2], **O. Karaiskou**[1], **I. Stavrianou**[1]
Dental School, Aristotle University, Thessaloniki, Greece
[1]Department of Endodontology
[2]Department of Oral and Maxillofacial Surgery

SUMMARY

Family violence and child abuse has become one of the latest social concerns and this trend can be clearly seen in the increasing number of reported cases. The purpose of this paper is to review the oral and dental aspects of child abuse and the role of dentists in evaluating conditions relevant to family violence. Dentists are part of the first line of defence against child abuse and, in many countries, they are mandated by law to have an understanding of child abuse and neglect, be able to recognize the signs and symptoms, and to report the cases of abuse. However the statistics show that only a small percentage of child abuse reports come from dentists. The extremely low reporting rate by dentists seams to be related to the lack of training dentists receive in how to recognize and report abuse. On the other hand, physicians receive minimal training in oral health and dental injury and, thus, may not detect dental aspects of abuse.

Family violence and child abuse can happen to any family. The topic of child maltreatment is difficult because all practitioners wish that child abuse and neglect did not happen. Cases of family violence are difficult to deal with because we know they are not the result of some disease or accident. Instead, we know that these injuries are deliberate and preventable.

About 65% of child abuse injuries involve head, neck or mouth areas. So, dental personnel may be in a good position to note abuse. As dentists, we are likely to be in contact with children who have been exposed to family violence the head and face are often easy targets of the abuse. The dental team that is alert to the fact that many children are been abused, and that many of these abused children have injuries to the head and around the mouth, may be able to identify an abused child and institute steps that might save the child's life.

Keywords: Family Violence; Child Abuse, statistics, risk factors, recognition

Characteristics of the Craniofacial Complex in Patients with Turner Syndrome

Cvetanka Miševska[1], Julijana Gjorgova[1], Mirjana Kočova[2], Elena Šukarova Angelovska[2]
Cyril and Methodius University, Skopje, FYR Macedonia
[1]Faculty of Dentistry, Department of Orthodontics
[2]Medical Faculty, Pediatric Clinic

SUMMARY

The purpose of this investigation was to determine the characteristics of the craniofacial complex in patients with Turner syndrome (TS). The sample comprised 8 females with TS, aged 7-18 years, and 8 females without known hormonal or genetic disorders, aged 8-17 years, selected as the control group. All subjects were evaluated by cephalometry. The results showed significant differences in the craniofacial size and morphology between the 2 groups. The cranial base of TS females was shorter and flattened. The maxilla and the mandible were smaller and retrognathic, the lower incisors displayed retroclination, where the interincisal angle was increased in the TS group compared to the controls.

Keywords: Craniofacial Complex; Turner Syndrome; Cephalometry

Clinical Justification for the Prophylactic Removal of Impacted Lower Third Molars

Stevo Matijevic, Marjan Marjanovic
Military Medical Academy, Clinic of Maxillofacial, Oral Surgery and Implantology, Belgrade, Serbia

SUMMARY

Aim: The aim of this study was to record the frequency of infections as complications accompanying impacted lower third molars, and to evaluate the justification for prophylactic extraction by establishing a level of relationship between the frequency of infection and the age of patients.
Methods: The investigation included 100 male patients with partially or completely impacted lower third molars, 18-25 years old, planned for surgical treatment regardless of the presence of infection.
Results: In 73% of the patients the infections occurred from unerupted lower third molars, whereas 27% of patients exhibited no signs of infections. Impacted lower third molars caused infection quite frequently, significantly more often in older than in younger patients. The highest frequency of infection was observed in the group of 20 to 23 years of age (75.3%). That is the reason why prophylactic extraction seems to be clinically justified, and that it should be done before the age of 20.

Keywords: Lower third molars, impacted; Prophylactic Extraction

Water Sorption and Solubility of 3 Types Dental Composites Polymerized with Halogen Light Curing Unit

I. Filipov[1], **Y. Uzunova**[2], **S. Vladimirov**[1], **L. Lukanov**[2]
[1]Medical University, Faculty of Stomatology, Department of Operative Dentistry and Endodontics
[2]Medical University, Department of Chemistry and Biochemistry, Plovdiv, Bulgaria

SUMMARY

Aim: The aim of this study was to compare the extent of water sorption and solubility of 3 types composite resin materials polymerized with halogen light curing unit.
Method: 3 resin-based composite restorative materials were investigated: Duraffil VS, Charisma and Solitaire 2. 9 disks of each tested material were prepared. 9 specimens were prepared from Charisma using method for inlay preparation. All specimens were polymerized according to the manufacturers' recommendations. The water sorption/solubility test was performed according to the ISO 4049 with the exception of mold dimension and way of curing.
Results: The highest water sorption showed specimens from Solitaire 2 and the lowest inlays from Charisma. Solitaire 2 was the composite that demonstrated maximum solubility, followed by Charisma and Duraffil VS. The inlays from Charisma demonstrated minimum solubility.
Conclusion: The demonstrated water sorption of the investigated dental composites was within the standards of ISO 4049, but their solubility exceeded the limit set by this regulation. The water sorption and solubility of the materials depend on the type of monomer, as well as on the size, shape, volume content and type of the inorganic filler.

Keywords: Composites; Water Sorption; Solubility

Water Sorption and Solubility of Mica Filled Denture Teeth Polymethylmethacrylate (PMMA) Resin

Özlem Gürbüz[1], Fatma Ünalan[2], Nugay Nihan[3], N. Pınar Bilgin[4]
[1]Deparment of Dentistry, Bakırköy Mental Hospital
[2]Department of Prosthodontics, Faculty of Dentistry, Istanbul University
[3]Department of Chemistry, Boğaziçi University
[4]Department of Prosthodontics, Faculty of Dentistry, Yeditepe University
Istanbul, Turkey

SUMMARY

The objective of this study was to determine water sorption and solubility of mica filled denture teeth polymethylmethacrylate (PMMA) resin. Test specimens were fabricated from silanized and unsilanized mica in 4 different concentrations (5, 10, 15, 20%) by weight of acrylic resin. Control specimens were unfilled acrylic resin. Water sorption and solubility were tested in accordance with ISO specification No 1567, with the exception of the dimensions of the test specimens. Kruskal Wallis, post Hoc Dunn's multiple comparison and Chi square tests were used for the statistical analysis ($p<0.05$).

Water sorption values were observed to differ significantly for the silanized and unsilanized mica mixture varieties in the 5%, 10%, 15%, 20% groups ($p<0.05$). Recorded water solubility values disclosed no significant difference between the silanized and the unsilanized batches containing 5% and 15% of mica ($p>0.05$). In contrast, a significant difference was observed between the silanized and the unsilanized groups containing 10% and 20% of mica ($p<0.05$). The 5-20% measurements of the specimens containing unsilanized mica revealed a significant difference for water sorption ($p=0.002$) and water solubility ($p=0.008$). Other measurements revealed no significant difference ($p>0.05$).

The addition of silanized and unsilanized mica to the denture teeth PMMA as a filler reduces water sorption noticeably and generally unchanged water solubility with the addition of silanized mica filler.

Keywords: Sorption; Solubility; Polymethymetacrylate; Mica

Evaluation of the Accuracy of 2 Electronic Apex Locators (Propex and Ray-Pex 5) with Scanning Electron Microscope

Ch. Stavrianos[1], **L. Vasiliadis**[1], **St. Vladimirov**[2], **L. Vangelov**[2], **I. Stavrianou**[2]
[1]Aristotle University, School of Dentistry, Department of Endodontology, Thessaloniki, Greece
[2]Faculty of Stomatology, Department of Operative Dentistry and Endodontology, Plovdiv, Bulgaria

SUMMARY

The purpose of this *in vivo* study was to evaluate the accuracy of multi frequency electronic apex locators (EALs), ProPex and Ray-Pex 5, in detecting the minor diameter under clinical conditions. 40 extracted single-rooted human teeth with mature apices were used in this study. The normal procedure was followed, which included a standard endodontic access opening, pulp removal, and irrigation of the root canal with 2.5% NaOCl. A K-file was used to determine working length in each root canal using both EALs. The file was cemented at the last measured working length and the teeth were extracted and the apical 4mm of each root was shaved using a multipurpose bur, under ×15 magnification with stereomicroscope, until the file was visualized in the canal space. Each root was observed and photographed at ×60 magnification with a scanning electron microscope to determine the distance between the tip of the file and the minor diameter; photographs of each specimen were viewed at a screen of a computer using the Adobe Photoshop 6.0. 3 investigators, blinded as to which EAL was used, calculated the distance of the file tip relative to the minor diameter for each specimen. In locating the minor diameter, ProPex was accurate 92.5% of the time to ±0.5 mm and Ray-Pex 5 was accurate 95% of the time to ±0.5 mm.

Keywords: Apex Locators, electronic; ProPex; Ray-Pex 5; Accuracy

Internal Resorption - a Fellow-Traveller of Endodontic Therapy

Mihal Kuvarati
Private Practice, Korca, Albania

SUMMARY

The persistent pulpal inflammation, trauma or periodontitis may provoke differentiation of pulpal connective tissue to polynuclear cells and the occurrence of internal root resorption or internal granuloma. 623 necrotic teeth with periapical and latero-apical lesions were treated endodontically. 54 teeth, or 7.22% of the cases, were found with internal resorption, most of them (37 cases) were upper incisors. All these teeth were divided into 4 degrees of resorption: (1) *Light resorption*, with scraping of inner dentinal walls up to 1 mm; (2) *Moderate resorption*, with scraping up to 1-2 mm; (3) *Advanced resorption*, when the cavity was close to the external root walls, but without perforation; (4) *Aggressive resorption*, with perforation of cementum or enamel.

Excluding the aggressive forms, the prognosis of these cases was satisfactory, if the biomechanical root canal preparation has been emphasized and its filling-up is realized by gutta-percha condensation method.

Keywords: Internal Resorption; Endodontics

Relationship Between Calcium and Zinc Contents of Enamel and DMFS Scores of Individuals

Tijen Pamir, **Ayşegül Demirbaş Kaya**
EGE University, School of Dentistry, Department of Endodontics & Restorative Dentistry, Izmir, Turkey

SUMMARY

Aims: The aim of this study was to observe the variations of calcium and zinc contents of the enamel of individuals having different DMFS scores.
Methods: In this *in vitro* study, extracted third molars of 12 patients, having low and high DMFS, were used. The mean DMFS score of the low caries group was 10, whereas it was 77.7 for high caries group. Calcium and zinc in the enamel were determined by electron probe micro analyzer combined with SEM. The differences between calcium and zinc amounts in the individuals with high and low DMFS scores were analyzed statistically.
Results: Calcium and zinc contents of the low DMFS group were denser than that of the high caries group. It was concluded that high calcium and zinc contents were related to low caries tendency.

Keywords: Calcium; Zinc; Enamel; Caries; DMFS

Active Classroom Teaching (ACT) for Healthy Teeth

Ece Eden, Özant Önçağ
Ege University, School of Dentistry, Department of Paedodontics, Bornova-Izmir, Turkey

SUMMARY

The aim of the present study was to present a low-cost school-based dental health education programme with active classroom teaching (ACT), and evaluate the effect of the programme at the end of the first year. Dental health education program namely, the ACT, was developed to improve the dental health knowledge of primary school children by the classroom presentation, using drawings on the blackboard. Dietary advice was given in the snack break. The simple scrub tooth brushing technique was advised in the classroom. The effect of the programme was investigated on 3 groups of children by the help of questionnaires.

Oral diagnosis of 423 students conducted in the classrooms revealed that only 23.64% of the children were caries-free. Calculated DMFT score was 0.17 and the deft score was 3.54. The findings revealed that there was no difference in dental health knowledge between 2 education groups, but a statistically significant difference was present among the control group and the latter two.

The present study showed that dental health education with low cost and small group sessions is effective in improving dental health knowledge.

Keywords: Dental Health, education; Primary School Children; Classroom

Education on Upper Airway Sleep Disorders in Turkish Dental Schools

E. Kale, A. D. Izgi, R. Niğiz
Dicle University, Faculty of Dentistry, Department of Prosthetic Dentistry, Diyarbakır, Turkey

SUMMARY

Many people suffer from upper airway sleep disorders, which increase the risk of cardio-pulmonary diseases and death. Dentists can play a role in the successful treatment of these patients with oral devices, but many lack of participating in the treating team. This may be due to lack of education. The purpose of this study was to determine which Turkish dental schools include the treatment of upper airway sleep disorders in their curriculum. This information may prove helpful to other schools to determine to what degree they should teach about this health problem.

A questionnaire was mailed to all Turkish dental schools affiliated with the Turkish Council of Higher Education by the first half of 2004. The obtained data were analyzed by use of descriptive statistics. 13 of the 16 schools responded. 54% of the schools that responded were teaching the disorders. Less than half of the schools currently include this area on a clinical level as part of their curriculum. The lack of inclusion is primarily caused by a lack of familiarity with the information available on these disorders. There is no apparent consensus with regard to whether to teach the subject, at what level, or to what degree.

Keywords: Upper Airway Sleep Disorders; Obstructive Sleep Apnoea; Oral Devices

Higher Risk of Preterm Birth and Low Birth Weight in Women with Periodontal Disease

A. Atanasovska-Stojanovska[1], **M. Stojovski**[2], **M.Popovska**[1]
[1]Faculty of Stomatology, Dental Clinical Centre, Department of Periodontology and Oral Pathology
[2]Faculty of Medicine; Gynaecology and Obstetric Clinic
Skopje, FYROM

SUMMARY

Background: Periodontal disease (PD) is a gram negative anaerobic infection that can occur in women of childbearing age (18-34), who may be at increased risk for having preterm and low birth-weigh (PLBW) newborns .
Methods: Here we report a case control study of 43 PLBW cases which were defined as infants (<37 gestation weeks and weighing <2500 g), and a daily random sample of 43 controls, mothers with normal birth-weight infants (NBW - >38 gestation weeks and weighing >2500). Clinical periodontal indices were measured on the labour wards, and gingival inflammation, bleeding on probing, dental plaque index, and clinical attachment level were determined. Associated risk factors for periodontal disease and PLBW were ascertained by means of a structured questionnaire and maternity notes.
Results: Our data show that risk for PLBW increased with increasing attachment lost; so severe form of periodontitis, with attachment level > 6mm, is a strongest risk factor, with odds ratio[OR] 14.44 95%CI 176-314.59, and p value 0.001. Risk factors significantly associated with PLBW were previous PLBW (OR 3.79 95% CI 1.37-10.72); maternal over-age 35 is strongly associated risk factor with PLBW (OR 3.15 95% CI 0.27 to 82.02), smoking during pregnancy is a risk factor which increased PLBW almost 2 times (OR 1.69 95% CI 0.55 to 5.29).
Conclusion: PD was associated with PLBW, independent of other risk factor; this promotes improving of periodontal health in future mothers, like a modifiable risk factor, which can be eliminated prior to or during pregnancy.

Keywords: Periodontal Disease, adverse effects; Preterm Delivery, risk factors; Infant; Foetal Growth Restriction

The Role of the General Dental Practitioner in Detection of Oral Cancer and Review of 13 Cases

M. Ünür, K. Bektaş, E. Demirez
Istanbul University, Faculty of Dentistry, Department of Oral Surgery and Medicine
Istanbul, Turkey

SUMMARY

Oral cancer is one of the 10 most frequent cancers worldwide. The aim of this presentation was to indicate the importance of oral examination and possibility of detecting early phase of CA by dental practitioner. 24 patients sent by dental practitioners to the Department of Oral Surgery and Medicine between 1996-2001 are reviewed here. 13 of them were diagnosed as carcinoma (CA) after biopsy (from *in situ* to stage II with LAP). Other 11 were hyperkeratosis (3), leukoplakia (2), erosive lichen planus (5) and traumatic ulceration (1). Therefore, 54.16% of the total number of patients was CA. Still our number of patients is too low to generate.

Keywords: Oral Cancer; Early Detection; Dental Practitioner