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12. DENTAL AGE CALCULATION BY DEMIRJIAN'S METHOD ON CHILDREN IN F.Y.R.O.M.

Galić Ivan[1], Ambrakova Vesna[2]*, Vodanović Marin[3], Brkić Hrvoje [3]

[1] Department for health studies and Center for forensic sciences, University of Split, Croatia

[2] Department of Pediatric and Preventive Faculty of Dentistry, University of Skopje, F.Y.R.O.M.

[3] Department for dental anthropology, School of Dental Medicine, University of Zagreb, Croatia

Aim: Aim of this study was to evaluate Demirjian's method for dental age calculation for children based on estimation of mineralization stages of permanent teeth when applied on children in F.Y.R.O.M..

Method: The sample of panoramic radiographs was selected from children aged 5-13 who were attending faculty dental clinics at the University of Skopje. Totally 471 radiographs of children were evaluated (233 boys and 238 girls) using four Demirjian's methods. Different sets of teeth were scored with one of eight stages of development (A-H). One method from 1973 is based on evaluation of 7 permanent teeth from left side of mandible and three methods from 1976 (one method based on evaluation of 7 permanent teeth and two methods based on evaluation different sets of four teeth: PM1, PM2, M1, M2; and I1, PM1, PM2, M2) from the left side of mandible. Kappa score was used for evaluation of intra-rater and inter-rater agreement.

Results: The mean Kappa score was 0.86 for intra-rater and 0.80 for inter-rater agreement. All four methods statistically significantly overestimated dental age comparing to real age (p<0.001). The mean overestimation for both genders was the least in PM1, PM2, M1, M2 method (0.86±0.95 year), following I2, PM1, PM2, M2 method (0.96±0.97 year) and method from 1976 using 7 teeth (0.96±0.97 year). The greatest overestimation was for method from 1973 using 7 teeth (1.11±1.00 year).

Conclusion: Demirjian's methods for dental age calculation are not suitable for children in F.Y.R.O.M..

13. DISINFECTION OF THE ROOT CANAL SYSTEM USING NOVEL PHOTODYNAMIC ANTIMICROBIAL THERAPY

Beltes Charis*, Economides Nikolaos, Papadopoulou Chrissanthi, Lambrianidis Theodoros
Dept. of Endodontology, School of Dentistry, Aristotle University of Thessaloniki, Greece
Dept. of Microbiology, Medical School, University of Ioannina, Greece

Introduction: Photodynamic antimicrobial therapy (PDAT) promotes disinfection and elimination of bacteria asa result of the photosensitization of microbial components. Thepurpose of this study was to test the hypothesis that PDAT, byphoto-activating photosensitizer Indocyanine green (ICG) with a near-infrared diode laser (810nm wavelength), has bactericidal properties on prototypestrains of Enterococcus Faecalis.

Methods: Planctonic cultures of Enterococcus Faecalis, grown in brain heartinfusion broth for 24 hours, underwent centrifugation and resuspendedin phosphate buffer saline. The suspension was adjusted to a baselineoptical density of 0.09 at 660nm, corresponding to a concentration of1-1,5 x 108 CFU/ml, using a spectrophotometer. Aliquots of thesuspension were incubated in extracted single-rooted teeth, previously chemomechanically prepared and sterilized.The following groups were tested: Group 1: Addition of ICG followed byexposure to laser light (0,5W power output) for 60 secondscorresponded to medium intensity light dose of 238 J/cm2. Group 2: ICGand exposure for 180 seconds (0,2W power output, light dose of 287J/cm2). Group 3: Exposure to laser light alone. Group 4: Addition of ICG alone. Group 5: Addition of 2,5% sodium hypochlorite solution.Group 6 and group 7 served as positive and negative grouprespectively. Bacterial growth was assessed by methods of serial dilution and viable plate counts after 24 and 48 hours incubationtime. All experiments were performed in duplicate.

Results: The results demonstrated that PDAT with combination of ICG and diodelaser exhibited significant antimicrobial activity towards the testedmicrobial strain, similar to the efficacy of sodium hypochlorite solution. Laser light, or the photosensitizer alone, had nosignificant effect on the eradication of bacteria.

Conclusions: The current ex-vivo study highlighted the interaction between a photosensitizer (Indocyanine green) and anear-infrared diode laser, as a novel combination of the PDAT, in theelimination of EnteroccocusFaecalis pathogen species.

14. EVALUATION OF ANTIBACTERIAL EFFECTIVENESS OF 8 ADHESIVE CEMENTS AGAINST ORAL BACTERIA

Ayse Dundar[1], Nejla Karacam[1], Tevfik Yavuz*[1], Nilgun Ozturk[2], Yasemin Pinar Karad[1].

[1] Research assistant, Selcuk University Faculty of Dentistry, Konya, Turkey

[2] Prof. Dr., Selcuk University Faculty of Dentistry, Konya, Turkey

Aim: Most currently available dental cements are designed to retain restorations, orthodontic bands and