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Abstracts

Contents

	Session 1
358	Nathan Cochrane Young Investigator Award
	Session 2
364	Clinical Studies
	Session 3
372	Epidemiology 1
	Session 4
379	De- and Re-mineralization and Erosion
	Session 5
386	Epidemiology 2
	Session 6
393	Fluoride and Hard Tissues
	Session 7
401	Pulp Response and Microbiology
408	Author Index

bond for indirect pulp protection in deep caries lesion at 12 months follow-up, with a high success rate with both caries removal technique.

5

Diagnosis, Risk Assessment and Treatment Decisions for Tooth Wear: A Case-Based Survey Among Belgian Dentists

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This study validated a case-based survey method and analyzed the extent to which Belgian dentists apply current concepts and strategies for tooth wear diagnosis, risk assessment and treatment decisions. A case-based, pre-coded questionnaire consisting of 10 clinical cases/patients with 20 teeth was developed. The cases were set up in a PowerPoint presentation illustrating patients with different types of tooth wear, levels of severity and risk. Dentists ($n = 104$), recruited at continued education courses, were from 8% of Belgian municipalities. Content and face validity of the method was established by using a panel of experts ($n = 3$) to assess the method's reliability using a test-retest procedure ($k = 0.88$) and establish a benchmark. Measurements of agreement between dentists and benchmark assessments at dentition level showed moderate agreement for overall cases/patients' tooth wear diagnosis ($\kappa = 0.55$) and risk assessment ($\kappa = 0.40$). At tooth/surface level, assessment of the clinical and radiographic severity of tooth wear was moderate ($\kappa = 0.57$) and good ($\kappa = 0.64$), respectively. Regarding treatment decisions, Belgian dentists showed poor agreement ($\kappa = 0.38$). Multivariate Poisson regression analysis, with the dentists and the cases/patients as cluster variables, showed a significant influence of the overall cases/patients' diagnosis being pathological wear ($RR = 1.39$; $p < 0.001$) together with the overall case/patients' risk being assessed as moderate or high ($RR = 1.39$ – 1.43 ; $p < 0.001$) for operative treatment. The type of tooth wear being erosion ($RR = 1.62$; $p < 0.001$) or abrasion ($RR = 1.88$; $p < 0.001$) also influenced significantly the decision for operative treatment. In conclusion, the case-based survey method was validated for content and for face validity. Belgian dentists apply to some extent current concepts on overall patients' tooth wear diagnosis and risk assessment and reasonably well the clinical and radiographic concepts of individual tooth/surface wear severity. Improvement is warranted concerning treatment decisions.

6

Caries Detection Using a 3D Intraoral Scanner Emitting Blue Light. An *in vitro* Assessment

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This study aimed (a) to define optimal cut-off limits for detection of occlusal caries lesions using fluorescence induced by a 3D intraoral scanner and (b) to evaluate the validity of the method. To define optimal cut-offs, 60 freshly extracted permanent posterior teeth were scanned with a 3D intraoral scanner (prototype based on 3Shape TRIOS intraoral scanner, not commercially available) which emits blue light. A texture representing the fluorescent signal from the tissue was mapped onto 3D models using specific software. Red (R) and Green (G) color components from 250 sound or carious sites located on occlusal surfaces of the teeth were used to calculate a function $f(R,G)$. Histological analysis of the teeth was conducted applying the following scale: D0, sound; D1, enamel lesion; D2, lesion into the 1/3 of dentin; D3, lesion into the 2/3 of dentin and D4, lesion into the 3/3 of dentin.

For Sensitivity (SE) – Specificity (SP) sum above 1.6, three optimal cut-offs for the $f(R,G)$ were defined corresponding to histological levels D1, D2 and D3. To assess the method's validity, the defined optimal cut-offs were applied on a new set of 48 teeth (200 sound or carious sites on occlusal surfaces). SE, SP and the area under the ROC curve (Az) were calculated based on histological analysis: D1: SE 0.88, SP 0.9, Az 0.94; D2: SE 1, SP 0.76, Az 0.91; D3: SE 1, SP 0.83, Az 0.87. In conclusion, caries detection using the 3D intraoral scanner emitting blue light showed good *in vitro* performance with high SE, SP and Az values for the three defined optimal cut-offs. Further studies with larger sample size are needed to optimize and validate the defined cut-offs.

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7

Is Obesity Associated with Tooth Loss Due to Caries? A Cross Sectional Study with Students

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Individuals with high body mass index have been associated with higher prevalence of dental caries mainly due to unhealthy lifestyle. The purpose of this study was to investigate if there is an association between obesity/overweight and dental loss due to caries among university students in southern Brazil. A cross-sectional study was carried with all entrant students regularly matriculated in the first semester of 2016 in Federal University of Pelotas.