1067 Systemic Impact and Reliability of Third Molar Probing Measures

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Studies that consider periodontal disease an exposure for systemic conditions have become more common. In these situations, third molars cannot be ignored as a possible source of infection and inflammation. However, many study designs exclude third molars because of measurement reliability even though there are few studies that indicate examiner reliability for third molars is worse than other teeth. Objectives: To examine the reliability of periodontal measurements on third molars and present an example of the contribution of third molars to systemic effects.

Methods: Reliability was based on calibration exams (six sites, all teeth) by fifteen examiners. A cohort study of pregnant women was used to determine the impact of third molar probing depths (PD) on preterm birth (gestational age <37 weeks). Extent of PD>=4mm was calculated for third molars and non-third molars, and was dichotomized at the upper quartile. Three multivariable logistic regression models for preterm birth were developed: 1) excluding third molars, 2) exclusively third molars, 3) model with both variables. Results: Reliability (percent agreement,Kappa) of PD within 1mm for third molars (90.8%,Kappa=0.89) were similar to non-third molars (92.0%,Kappa=0.90). Perfect agreement for PD, third molars (45.4%,Kappa=0.33) and PD non-third molars (49.0%,Kappa=0.35) also were similar. Model 1: non-third molar PD is significantly related to preterm birth (OR=1.8;95%CI=>1.0-3.3). Model 2: third molar PD is significantly related to preterm birth (OR=2.6;95%CI=1.4-4.7). Model 3: only third molar PD is significantly related (OR=2.6;95%CI=1.2-5.7) while non-third molar PD is not significant (OR=1.0;95%CI=0.4-2.2). Conclusion: Examiner reliability of PD on third molars is similar to non-third molars and our example indicated third molar PD can make a significant contribution to systemic conditions. It is important to include third molars in studies that have systemic outcomes where periodontal disease is the exposure. This study was funded by NIH grant DE-012453.

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