OP8 DENTAL MATURITY ASSESSMENT IN PREMATURELY BORN CHILDREN

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AIMS: To investigate if dental development, assessed on panoramic radiographs, is affected by prematurity and if an individual tooth or a group of teeth are more evidently affected.

MATERIALS AND METHOD: Panoramic radiographs were obtained from 116 children born in the south of Sweden; 36 extremely preterm (EPT), 38 very preterm (VPT) children and 42 full term controls (C). Five calibrated observers analyzed the radiographs according to the method of Demirjian *et al*. (1973). Dental maturity was determined through blinded assessment of the left permanent mandibular teeth. The level of development of each tooth was summed up to a dental maturity score that resembles the percentile distribution of dental maturity of the child that was compared between the groups, on a group level. Possible differences in maturity level of specific teeth in the different groups were also examined. Inter- and intra-observer agreements were calculated as Kappa (κ)values.

RESULTS: Comparisons at a group level showed that the EPT group had an average dental maturity score between 81.9 and 86.7, the VPT scored 85.2-89.1 and the C 88.1-91.0, depending on observer. All five observers showed significant differences ($P \leq 0.006$) in maturity score between the EPT and C groups. At the tooth level comparison, all observers noted a significant delay ($P \leq 0.002$) in the maturity of tooth 37 when EPT was compared with C. Significant differences of other teeth were also found but no consensus between the observers could be seen. The κ values of intra-observer agreement for all teeth varied between 0.16-1.00, and the κ values of inter-observer agreement were between 0.31-0.71.

CONCLUSION: The findings suggest a general delay in tooth maturity for the EPT children at 9 years of age. Lower gestational age seems to indicate a greater delay of tooth maturity compared to full term children.