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1: Nephrol Dial Transplant. 2009 Mar 17. [Epub ahead of print]

## The correlation between dental calculus and disturbed mineral metabolism in pediatric patients with chronic kidney disease.

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BACKGROUND: Vascular calcifications have been documented in children with end-stage renal disease. However, only a few reports have described abundant dental calculus formation in children suffering from chronic kidney disease (CKD). Moreover, dental calculus scores (DCS) and their correlation with renal disease severity have not been studied. METHODS: DCS in 74 young CKD patients were evaluated: 25 pre-dialytic (PrD), 18 on dialysis (D) and 31 with transplants (T) compared to 32 healthy participants (C). Saliva and serum analysis included creatinine (Cr), urea (U), calcium (Ca), phosphorous (P), magnesium (Mg) as well as intraoral pH levels. RESULTS: All patient groups presented high DCS. DCS and pH levels were higher in the D group with a positive correlation between pH and lower incisor DCS (r = 0.56, P = 0.017). The highest salivary Ca was found in the PrD group. Salivary P in the PrD group was found to be higher than in the T and C groups. The lowest salivary Mg was found in the D group while the highest salivary Ca x P product was found in the PrD group. In all patient groups, salivary U was higher than in the C group with a 2.5-fold increase in the D group. Salivary Cr resembled the U salivary concentrations. CONCLUSIONS: Alterations in salivary Ca, P, Mg, U, Cr and intraoral pH levels were observed in the patient groups. DCS correlated with renal disease severity and therefore may be a reflection of other tissue calcification pathologies found in these patients.

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