Oral rehabilitation after treatment of does sickle cell crises and comorbidities increase the risk of pulp necrosis in healthy teeth?

Cyrene Piazera Silva Costa,1 Cecília Cláudia Costa Ribeiro,1 Érika Bárbara Abreu Fonseca Thomaz,1 Soraia de Fátima Carvalho Souza1

1Post-graduation Program in Dentistry, School of Dentistry, Federal University of Maranhão, São Luís, MA, Brazil  
cyrenepiazera@hotmail.com

Objective: to evaluate the extent to which the number of sickle-cell crises per year (SCCs/year) and the presence of comorbidities (CoMs) are associated with asymptomatic pulp necrosis (APN) in teeth with healthy crowns among patients with sickle cell anemia (SCA). Material and Methods: this is a cross-sectional study nested within a retrospective cohort study (local Research Ethics Committee Protocol No. 23115 004993/2010-71). The sample (n = 140) consisted of patients with SCA who were aged ≥16 years, possessed at least one healthy tooth, had no history of inferior alveolar nerve paresthesia within the previous 6 months, and had no previous history of dental trauma or periodontal disease. The diagnostic test for APN was performed using pulse oximetry adapted to dentistry, in which the percentage of arterial oxygen saturation of the pulp was set at ≤79%. Results: among the 140 patients evaluated, 15 had APN and 125 did not. Two models were tested: one with a dichotomous outcome (having APN or not) and another based on the percentage of teeth with APN; structural equation modeling was used (α = 0.05). There was no association between the number of SCCs/year and the two APN outcomes considered herein. The presence of CoMs explained the presence of APN (SFL > 0.999; p = 0.032). Conclusion: the presence of CoMs in patients with SCA increases the risk of APN in otherwise healthy teeth.  

Keywords: Sickle cell anemia; Dental pulp; Dental pulp necrosis; Pulse oximetry.