

Methemoglobin Levels in Generally Anesthetized Pediatric Dental Patients Receiving Prilocaine versus Lidocaine.

Gutenberg LL, Chen JW, Trapp L. *Anesth Prog.* 2013 Fall;60(3):99-108.

The purpose of this study was to measure and compare peak methemoglobin levels and times to peak methemoglobin levels following the use of prilocaine and lidocaine in preoperative children undergoing comprehensive dental rehabilitation under general anesthesia.

Ninety children, 3–6 years of age, undergoing dental rehabilitation under general anesthesia were enrolled and randomly assigned into 3 equal groups: group 1, 4% prilocaine plain, 5 mg/kg; group 2, 2% lidocaine with 1 : 100,000 epinephrine, 2.5 mg/kg; and group 3, no local anesthetic. Subjects in groups 1 and 2 were administered local anesthetic prior to restorative dental treatment. Methemoglobin levels (SpMET) were measured and recorded throughout the procedure using a Masimo Radical-7 Pulse Co-Oximeter (Masimo Corporation, Irvine, Calif, RDS-1 with SET software with methemoglobin interface). Data were analyzed using chi-square, one-way analysis of variance (ANOVA), and Pearson correlation (significance of P , .05).

Group 1 had a significantly higher mean peak SpMET level at 3.55% than groups 2 and 3 at 1.63 and 1.60%, respectively. The mean time to peak SpMET was significantly shorter for group 3 at 29.50 minutes than that of group 1 at 62.73 and group 2 at 57.50 minutes.

Prilocaine, at 5 mg/kg in pediatric dental patients, resulted in significantly higher peak SpMET levels than lidocaine and no local anesthetic. In comparison to no local anesthetic, the administration of prilocaine and lidocaine caused peak SpMET levels to occur significantly later in the procedure.