Pharmacokinetics and Clinical Effects of Sublingual Triazolam in Pediatric Dental Patients.

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Abstract

The purpose of this investigation was to describe the pharmacokinetics of sublingual triazolam in children. Nine healthy children (64–98 months old) received 0.25 or 0.375 mg of sublingual triazolam before dental treatment. Plasma triazolam concentrations were measured by gas chromatography/ mass spectrometry and analyzed by noncompartmental methods. The peak concentration was 4.9 ± 2.0 ng/mL (mean ± SD), time to peak was 75 ± 32 minutes, the elimination half-life was 91 ± 32 minutes, and apparent clearance was 17.6 ± 8.8 mL · kg $^{-1}$ · min $^{-1}$. Children were tested for gait ataxia, amnesia, and diplopia during a screening session and again after triazolam. Ninety minutes after drug administration, seven of nine children demonstrated ataxia, and three of nine demonstrated amnesia. Peak triazolam concentrations were similar in children with or without ataxia, but they were significantly higher in children with amnesia compared with those without amnesia. Six children demonstrated diplopia 30 and 120 minutes after triazolam; however, peak triazolam concentrations were similar in both groups. Sublingual administration was an acceptable alternative route of triazolam delivery in children.