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Pharmacokinetics and Clinical Effects of Multidose Sublingual Triazolam in Healthy Volunteers.

Original Contributions

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Abstract:
Triazolam is increasing in popularity as a premedication prescribed by dentists to help their fearful and anxious patients tolerate the potentially aversive nature of some dental procedures. Recent anecdotal reports suggest that incremental sublingual dosing of triazolam may be an effective technique for producing conscious sedation in the dental setting. Although promising, no laboratory or clinical data have been available to evaluate the efficacy or safety of this approach. This study was designed to determine the pharmacokinetics and sedative effects of incremental sublingual dosing of triazolam (total, 1.0 mg) in healthy adults. Ten healthy adult volunteers received sublingual triazolam (0.25 mg) followed by additional doses after 60 (0.50 mg) and 90 (0.25 mg) minutes. Plasma triazolam concentrations, clinical effects (Observer's Assessment of Alertness/Sedation score), and processed electroencephalogram (bispectral index score) were measured intermittently for 3 hours. Plasma triazolam concentrations (mean +/- SD, 5.1 +/- 1.1 ng/mL) and drug effects (Observer's Assessment of Alertness/Sedation score, 2 +/- 1; and the bispectral index score, 62 +/- 16) were greatest in all subjects at the end of the 3-hour evaluation period. Eight of the subjects had Observer's Assessment of Alertness/Sedation scores consistent with the definition of deep sedation or general anesthesia (Observer's Assessment of Alertness/Sedation score, <3) at some of the later time points in the 180 minutes of data collection. In comparison, 4 of the subjects had bispectral index scores less than 60 during these later time points of data collection. Given the considerable intersubject variability in triazolam concentrations and effects, additional research is needed to assess this multidosing strategy before it can be endorsed as a useful and safe sedation technique for managing fearful and anxious patients in dental practice.