Population study of triazolam pharmacokinetics.

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The kinetics of a single 0.5 mg oral dose of the triazolobenzodiazepine hypnotic triazolam, were studied in 54 healthy young men aged 20-44 years, with a mean body weight of 77 kg. Triazolam kinetics were determined from multiple plasma concentrations measured during 14 h post-dose. The overall mean +/- s.e. mean (with range) kinetic variables were: peak plasma concentration, 4.4 +/- 0.3 (1.7-9.4) ng ml-1; time of peak, 1.3 +/- 0.1 (0.5-4.0) h after dose; elimination half-life, 2.6 +/- 0.1 (1.1-4.4) h; total AUC: 19.1 +/- 1.1 (4.4-47.7) ng ml-1 h; oral clearance, 526 +/- 38 (175-1892) ml min-1. All kinetic variables were consistent with Poisson distributions, based on the Kolmogorov-Smirnov Goodness of Fit test. None of the variables fit normal distributions. Four of five were consistent with a log normal distribution. Peak plasma level was highly correlated with clearance (r = -0.85, P less than 0.0001), and AUC (r = 0.85, P less than 0.0001) but not with body weight (r = 0.21, NS). Clearance and body weight were not correlated (r = -0.01). Triazolam clearance may vary widely even within a homogeneous group of healthy young men.

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