valium pharmacokinetics

Most of these effects are thought to result from a facilitation of the action of gamma aminobutyric acid GABA , an inhibitory neurotransmitter in the central nervous system. Absorption is delayed and decreased when administered with a moderate fat meal. Temazepam and oxazepam are largely eliminated by glucuronidation. In young healthy males, the volume of distribution at steady-state is 0. Conflicting information has been published on changes of plasma protein binding in the elderly. Consequently, the elderly may have lower peak concentrations, and on multiple dosing higher trough concentrations. The average increase has been variously reported from 2-fold to 5-fold, with individual half-lives over hours reported. Mean half-life is also prolonged with hepatic fibrosis to 90 hours range 66 - hours , with chronic active hepatitis to 60 hours range 26 - 76 hours , and with acute viral hepatitis to 74 hours range 49 - Diazepam and its metabolites cross the blood-brain and placental barriers and are also found in breast milk in concentrations approximately one tenth of those in maternal plasma days 3 to 9 post-partum. It is a colorless to light yellow crystalline compound, insoluble in water. There is also an increase in the average time to achieve peak concentrations to about 2. Diazepam and its metabolites are excreted mainly in the urine, predominantly as their glucuronide conjugates. Newborns In full term infants, elimination half-lives around 30 hours have been reported, with a longer average half-life of 54 hours reported in premature infants of 28 - 34 weeks gestational age and 8 - 81 days post-partum. The structural formula is as follows: Valium is available for oral administration as tablets containing 2 mg, 5 mg or 10 mg diazepam. In addition to the active ingredient diazepam, each tablet contains the following inactive ingredients:Jump to Pharmacokinetics - Pharmacokinetics[edit]. Diazepam can be administered orally, intravenously (must be diluted, as it is painful and damaging to veins), intramuscularly (IM), or as a suppository. When administered orally, it is rapidly absorbed and has a fast onset of action. The onset of action is one to five Biological half-life?: ?20 hours (36 hours. There is a potentially relevant interaction between diazepam and compounds which inhibit certain hepatic enzymes (particularly cytochrome P 3A and 2C19). Data indicate that these compounds influence the pharmacokinetics of diazepam and may lead to increased and prolonged sedation. At present, this reaction is. Diazepam is a benzodiazepine that exerts anxiolytic, sedative, muscle- relaxant, anticonvulsant and amnestic effects. Most of these effects are thought to result from a facilitation of the action of gamma aminobutyric acid. (GABA), an inhibitory neurotransmitter in the central nervous system. Pharmacokinetics. Absorption. Clinical pharmacokinetics of diazepam. Mandelli M, Tognoni G, Garattini S. Diazepam is still one of the most used of the benzodiazepine group of drugs. Extensive studies over 10 years have defined a fairly complete profile of its kinetics. Minor aspects relating to patterns of its metabolism and excretion in certain age groups. Clinical Pharmacokinetics of Diazepam. Marinella Mandel/i, Gianni Tognoni and Silvio Garattint' lstituto di Flicerche Farmacologiche Mario Negri', Milan. Summary. Diazepam is still one of the most used of the benzodiazepine group of drugs. Extensive studies over it? years have defined a fairly complete profile of its kinetics. A benzodiazepine with anticonvulsant, anxiolytic, sedative, muscle relaxant, and amnesic properties and a long duration of action. Its actions are mediated by enhancement of gamma-aminobutyric acid activity. It is used in the treatment of severe anxiety disorders, as a hypnotic in the short-term management of insomnia. Pharmacokinetics Absorption After oral administration >90% of diazepam is absorbed and the average time to achieve peak plasma concentrations is hours with a range of to hours. Absorption is delayed and decreased when administered with a moderate fat meal. In the presence of food mean lag times are. Explore the Overview of Pharmacokinetics from the Professional Version of the Merck Manuals. some drugs, especially those that require both metabolism and excretion, may be remarkably long in the elderly (see Figure: Comparison of pharmacokinetic outcomes for diazepam in a younger man (A) and an older man (B).). Pharmacokinetics. Diazepam is rapidly absorbed following oral administration. It is slowly and incompletely absorbed after intramuscular administration. It is highly lipid soluble and widely distributed throughout the body. Diazepam readily crosses the bloodbrain barrier and is highly protein bound. Diazepam is Average sedative dose (IV)?: ? mg. An important consideration in understanding benzodiazepine pharmacokinetics is that some benzodiazepines have

no active metabolites. Midazolam (Versed) is a good example; however, diazepam (Valium) is metabolized to oxazepam (Serax) and desmethyldiazepam, which themselves have sedative properties.