

Postmortem Drug Redistribution

REFERENCE: Barnhart FE, Bonnell HJ, Rossum KM: Postmortem drug redistribution; *Forensic Sci Rev* 13:101–129; 2001.

ABSTRACT: One of the most difficult responsibilities of the forensic toxicologist is the interpretation of postmortem drug levels and their possible significance as to behavior and/or cause of death. During the past 15 years, much work has been performed using human case information and animal studies to illustrate and validate the phenomena of postmortem drug redistribution. These studies provide certain clarification to drug level interpretation. They also cast uncertainty on the interpretation of drugs where analogous studies are incomplete or totally absent. Literature data of more than 30 drugs, as reported by numerous authors, are reviewed to illustrate two phenomena: (a) postmortem redistribution occurs primarily as a function of the diffusion of drugs along a concentration gradient, from sites of high concentration in solid organs into the blood with artificial elevation of the drug levels; and (b) while many drugs seem to subject to postmortem redistribution, there are also others that undergo no change whatsoever. While additional work still needs to be performed, there has been enough achieved to both illustrate and validate that postmortem redistribution does exist. This information is helpful to forensic pathologists in determining sample sets taken during autopsy.

KEY WORDS: Central blood, peripheral blood, postmortem drug redistribution, solid organ diffusion.
