



### **K10 Determination of Opiates (Morphine) in Postmortem Bone Marrow and Comparison With Blood Morphine Concentrations**

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After attending this presentation, attendees will know how long after a body postmortem buried could be analyzed for opiates.

The aim of this presentation is to predict how long after a body postmortem buried could be analyzed for opiates. In sudden, unexpected deaths, traumatic or pathologic mechanism must be excluded as possible causes of death and selection and preservation of appropriate specimens for toxicologic analyzes is very important. For toxicologic analyses generally used specimens are blood and urine. Frequently forensic toxicologist is faced with situations in which contamination and decomposition make the collection of blood samples impossible for suitable analytical purposes.

**Material and Method:** In such cases, to prove the viability of bone marrow analyzes, to 9 albino rabbits were injected morphine into the marginal ear vein in 0.1 mg/kg increased doses from 0,3 gram/kg for each rabbit. One hour after dosing, the rabbits were sacrificed and blood, urine and bone marrow samples were collected for analyzes. The whole body with other extremities bones were buried. At the seventh and fourteenth day, the bones were excavated and bone marrow specimens were collected. CEDIA® technology was used for the analysis.

**Results and conclusion:** It was demonstrated that an increase in the given total morphine dose and morphine dose per kilogram of cases, an increase blood morphine concentration also occurred. In urine samples, high morphine doses were detected. There were no quantitative linear relationship between the concentration of morphine in urine and blood. In comparison of blood morphine concentration to postmortem [immediately collected] bone marrow morphine concentration, there were statistically meaningful increase in bone marrow morphine concentrations with increasing of blood morphine concentration. Also the increasing of blood morphine concentration was correlated with postmortem seventh and fourteenth day bone marrow morphine concentrations. Morphine concentration seventh and fourteenth day bone marrow decreased relative to the postmortem [immediately collected] bone marrow morphine concentrations.

In drug related sudden deaths. Drugs cannot be determined in resistant tissues like hair and in cases of contamination and decomposition exclude the collection of blood or in skeletal remains, bone marrow may be the most available evidence. It's concluded that further experimental research in this area should be useful and indispensable for forensic toxicology.

#### **Postmortem, Bone Marrow, Opiates**