K20 Changed Contrast Agent Like Imagopaque the Concentration CNS Active Drugs by Cadavers?

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After reading this poster presentation, the observer will understand the basics of the downspout by a computed tomography angiography (CTA) and the effects from the contrast agent imagopaque on the concentration of CNS active drugs to be analyzed. At the Centre of Forensic Imaging and Virtopsy in Bern, 22 selected decedents underwent a whole body computed tomography angiography (CTA). The cases were from 9 casualties, 10 natural deaths, 1 homicide, and 1 error in medical treatment. The gender of the cases were 7 women and 15 men. The mean age at time of death was 48.2 years, ranging from 3 to 85 years. The mean interval between estimated times of death and imaging was 29.5 hours, ranging from 5.5 to 70 hours.

A conventional autopsy, which started in the 5 hours later (mean) was performed in every case for a direct comparison with the radiologic findings. In all cases a mixture of a water-soluble, hydrophilic medium with polyethylene glycol (PEG) as a large molecular carrier substance and iohexol as the contrast agent in a mix ratio of 15:1 was used. During the angiography, we needed between 12.5 and 78.9 ml/kg KG from the contrast agent. Prior to the CT angiography, 10 ml peripheral venous blood was sampled from the femoral vein from each cadaver. On the occasion of the autopsy, the second venous blood sample was taken. In this study a comprehensive screening for central nervous system (CNS) active drugs was performed by LC/MS/MS. All analysis were carried out using an 1100 LC system (binary pump and autosampler) coupled to an API 4000 mass spectrometer equipped with a Turbo-Ion Spray source.

The instrument software Analyst (ver. 1.4.2) was used for data processing. The multi target screening strategy is in principal described at Thieme & Sachs (2003).[1]

In five of the cases opioids, antidepressants, and benzodiazepines were detected in therapeutic ranges. The results of this study shows, that there are no new volumes of distribution and that the applied analytical method is practical. The most important result of the study is that a qualitative and quantitative analysis for drugs could be performed after a CTA with injected contrast volume.

Reference:

[1] Thieme D, Sachs H, Improved Screening capabilities in forensic toxicology by application of liquid chromatography-tandem mass spectrometry. Anal Chim Acta 483,171-186, 2003

CTA, Drug Concentration, Toxicological Analysis

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