

Research Article

Published Date:-2018-01-17 00:00:00

[Correlate alcohol and toxicology analysis with Urinary Bladder Distension on Post-mortem Computed Tomography \(PMCT\): A Validation Study](#)

Urinary bladder distension is traditionally regarded as a sign of intoxication at autopsy, however, to date there is very little literature available to support this hypothesis. The purposes of our study were to correlate alcohol and/or toxicological analysis with calculated urinary bladder volumes and its sensitivity as well as to test the validity by using the radiologically calculated urinary bladder volumes (UBVs) from CT images. The study population was all the postmortem cases involving with blood and/or urine samples sent for alcohol and/or toxicology analysis in 2016 at the Kuala Lumpur Hospital. Out of that 485 cases, there were 127 postmortem cases retrieved with positive alcohol and/or toxicology results. Positive toxicology results in this study was referring to drug of abuse (DoA) including amphetamine type stimulants, opiates, cannabis and ketamine. Urinary bladder volume (UBV) was calculated based on the equation used in ultrasonographic volumetry, $V = a \times b \times c \times 0.5$. These 3 parameters correlated well with the UBV and having a strong positive relationship. There was a significant positive correlation at low strength between alcohol concentrations with calculated UBV. There was statistical significant correlation between urinary bladder distension on postmortem CT and cases of intoxication especially more corresponding for positive alcohol detection. The average sensitivity was 35.65% whereby it was slightly lower than those reported in Rohner C, et al. In this study we have deduced that diuretics effect of alcohol was the main reason causing bigger urinary bladder or UBV and was more prominent than the influence of drug of abuse on the urinary bladder sphincter. The distension of urinary bladder should raise suspicion of intoxication, but would not provide information on the quantity of the intoxicating agent due to its significant but poor correlation. It was important to note that intoxication may also be present in cases with low urinary bladder volume. In conclusion, it is vital to consider circumstantial evidence, as well as the presence of additional findings on imaging before suggesting the diagnosis of intoxication based on urinary bladder distension on imaging. Currently, the use of CT bladder imaging should serve as a strong indication that the individual may be intoxicated but should be confirmed by a complete autopsy and a detailed toxicological analysis.

Case Report

Published Date:-2018-01-11 00:00:00

[Implications of entomological evidence during the investigation of five cases of violent death in Southern Brazil](#)

In homicide cases, knowledge about time of death is important as it directs police investigation towards the discovery of authorship, including or excluding suspects of a crime, and determining nature of death. In Brazil, entomological evidence is still neglected by official forensic organizations and for this reason cases using insects to estimate post-mortem interval (PMI) are still rare. Dipteran specimens collected and analyzed by the staff of Criminalistics Institute (CI) from São Paulo State, Brazil, made it possible to elucidate circumstances of the death, including suspects to the crime scene, in five occurrences involving discovery of cadavers. In all cases, blowflies were collected and were identified as belonging to species *Chrysomya albiceps* (Wiedemann, 1819), *Chrysomya megacephala* (Fabricius, 1794), *Chrysomya putoria* (Wiedemann, 1830), *Hemilucilia semidiaphana* Rondani, 1850 and *Lucilia eximia* (Wiedemann, 1819) (Diptera: Calliphoridae), while only in one case Sarcophagidae (Diptera) flies were also collected. PMI estimate was calculated taking into account laboratorial developmental rate data of mentioned species on the environmental temperature on which bodies and insects were exposed, along with comparisons to field research previously conducted in those areas. Based on larval age and behavior, the course of the investigation had changed, pointing to the crime author (case I), as well as the nature of the crime (cases I-III) and associated suspects to the criminal act (cases IV-V). Results show how promising is the use of entomological evidence during investigations of violent deaths.
