

Effectiveness of Post-Mortem Computed Tomography (PMCT) in comparison with conventional autopsy: a systematic review

ABSTRACT

Background: With the advancement of technology, Computed Tomography (CT) scan imaging can be used to gain deeper insight into the cause of death. **Aims:** The purpose of this study was to perform a systematic review of the efficacy of Post- Mortem Computed Tomography (PMCT) scan compared with the conventional autopsies gleaned from literature published in English between the year 2009 and 2016. **Methodology:** A literature search was conducted on three databases, namely PubMed, MEDLINE, and Scopus. A total of 387 articles were retrieved, but only 21 studies were accepted after meeting the review criteria. Data, such as the number of victims, the number of radiologists and forensic pathologists involved, causes of death, and additional and missed diagnoses in PMCT scans were tabulated and analysed by two independent reviewers. **Results:** Compared with the conventional autopsy, the accuracy of PMCT scans in detecting injuries and causes of death was observed to range between 20% and 80%. The analysis also showed that PMCT had more advantages in detecting fractures, fluid in airways, gas in internal organs, major hemorrhages, fatty liver, stones, and bullet fragments. Despite its benefits, PMCT could also miss certain important lesions in a certain region such as cardiovascular injuries and minor vascular injuries. **Conclusion:** This systematic review suggests that PMCT can replace most of the conventional autopsies in specific cases and is also a good complementary tool in most cases.

Keyword: Post-mortem computed tomography; CT scan; Autopsy; Human; Virtual autopsy; Cardiovascular