

The Use of Computed Tomography Pulmonary Angiography in The ER Setting for Suspected Pulmonary Embolisms: A Clinical Audit

Abstract: (250 words)

Background: Computed tomography pulmonary angiography (CTPA) is a diagnostic test that can be used as the final step in confirming or ruling out the diagnosis of a pulmonary embolism (PE). Evidence shows that the over-ordering of CTPAs due to suspicion of PEs is a globally widespread issue. Hence, this audit was conducted to assess a private hospital in the state of Qatar's use of CTPAs as a diagnostic tool for suspected PEs in comparison to the standardized NICE guidelines on the diagnosis of PEs.

Methods: An electronic chart review was conducted for all cases referred for CTPA from the ER department over a period of 6 months (from 1/8/2018 to 30/1/2019). 159 cases were selected for the study after exclusion. Data collected included the clinical presentations and the diagnostic work-ups before a CTPA was requested. The clinical presentations were assessed for suspicion of PEs and the diagnostic work-ups were assessed for compliance to NICE guidelines.

Results: The study showed that 34 (21.4%) of the 159 CTPA requests were unwarranted according to NICE guidelines. The diagnostic work-ups recommended by NICE are not being carried out properly, in turn leading to a large percentage of patients unnecessarily undergoing CTPAs.

Conclusion: CTPAs were found to be over-ordered in this hospital, needlessly exposing patients to radiation. The practice in the emergency department must therefore be improved through continued professional education, external/internal incentives or other ways in order to tackle this issue. Larger studies investigating similar patterns in the Middle East region may be warranted.