The Appropriateness of the Usage of CTPA in suspected Pulmonary Embolism

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The role of diagnostic imaging in PE is increasingly undertaken by CT Pulmonary Angiography (CTPA). The inappropriate use of CTPA has a negative impact on patients’ safety and hospital resources, along with increasing the load on the working force. This audit aims to assess the local practice against the iRefer guidelines for CTPA in suspected PE.

To improve the diagnostic yield of CTPA, risk stratification criteria, involving Wells score and D-dimer have been used.

To assess:
■ Utilisation of CTPA in PE.
■ CTPA diagnostic yield in terms of PE & alternative Dx.
■ Adherence to local Hospital protocol.

Retrospective audit was performed using the PACS computer information system.
73 Patients who had a CTPA over a two-month period (February & March 2015) were identified from the radiology records.

The collected data included: patients’ demographic data, Referral source, Clinical referral information including (Wells score & D-dimer), CXR findings and CTPA test result.

Results
Age & Gender: 30% old age (60-79) years
Referral source: 64% Inpatient, 25% A&E, 10% outpatient
CXR: was documented in 92% of the cases
Wells score: written in 71% of the requests
D-dimer: in about half of the patients, it was not done appropriately.
PE: detected in 15% of the cases, mainly inpatient 73%
Alternative DX: mainly consolidation followed by Effusion and ILD.

Conclusion:
The local policy was not strictly adhered, with Wells score had not been mentioned in about third of cases and D-dimer been inappropriately conducted in about half of them. PE rate was at the lower accepted level (15%) with causes other than PE were much higher than it should be. The predicted deficit based on the two months assessment is ~£28,000 P/A.

Recommendations
1. CXR must be done as a preliminary investigation and its finding should be considered as an essential part of stratification criteria
2. Strict adherence to local protocol
3. A special CTPA request form should be used, preferably electronic one, which can not be submitted unless all clinical information including well’s score and d-dimer are provided
4. Availability of CTPA request forms (if paper ones are used)
5. D-dimer should only be done only in line with local policy
6. Targeted education of the referring clinicians and junior doctors
7. Re-audit.

References