

Incidence of PE during COVID-19 pandemic assessed on CTPA in HUTH

Story of two little peaks before a massive peak

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INTRODUCTION:

COVID-19 (SARS-CoV2) was declared a pandemic by WHO in March, 2020 and has affected more than 150 million people worldwide with around 3.5 million reported deaths. Virus manifests a spectrum of clinical presentations ranging from asymptomatic, mild to life threatening ultimately leading to death. The virus primarily effects respiratory system.

It has been noted that COVID-19 can lead to an increased incidence of thromboembolism, both arterial and venous.

We conducted a study to evaluate incidence of pulmonary embolism (PE) at CT pulmonary angiography in patients at HUTH during early peaks of Covid-19 pandemic.

AIMS AND OBJECTIVES:

- To assess rate of PE on CTPA performed in HUTH in April and November 2020.
- To assess rate of PE on CTPA in Covid-19 and Non Covid-19 patients.
- To assess rate of PE on CTPA in ICU and ward patients.

MATERIALS AND METHODS:

- A retrospective, single-centre study to evaluate all patients who underwent CT pulmonary angiography between 1st -30th April 2020 and 1st-30th November.
- The relative rate of CT pulmonary angiogram positivity was recorded for ICU and ward patient along with Covid-19 status.
- We also assessed CT pulmonary angiography positivity in relation with wells score, D-dimer and C-reactive proteins.
- A P value of .05 was considered significant.



RESULTS:

- Total CTPA ; 603
- Age range 17-97 years
- Male = 306 Female = 297
- 144 patients were tested positive for COVID-19 and 31% had PE
- In Covid-19 negative patients, only 16% had PE ,
- CT pulmonary angiography positivity rate was even lower in patients where covid-19 status was not checked 13% (P= .0007).

ICU vs Ward Patients:

In ICU a total of 39 patients underwent CTPA, of these 30 % had PE. 564 ward patients underwent CTPA but only 18% had PE. (p value .042)

Wells Score Documentation:

Wells score was only documented in 220 cases, of these 17 % had PE.

It did not show significant association with PE in our audit.

Trust guidelines require Wells score documentation for all CTPA requests to help during protocol of the study,

Our audit showed poor compliance.

Association with D-Dimer:

D-dimer blood level was checked in 390 patients, of these 18% had PE.

D-dimer blood level less than 1000 ng/mL were noted in 131 patients, of these 7% had PE .

However D-dimer more than 1000 ng/mL were noted in 259 cases of these 24% had PE. (P value.00002)

The overall mean d-dimer level was 5857 ng/mL.

Association with CRP:

C-reactive protein (CRP) was checked in 542 patients, of these 17% had PE.

The CRP blood level less than 50 mg/L were noted in 306 patients, of these 13% pad PE,

However CRP level more than 50 mg/L were noted in 256 patients, of these 22% had PE. (P value .004)

CONCLUSION:

- PE rate was 19% in CTPA performed at HUTH
- PE rate was 31% in Covid-19 patients but only 15% in Non Covid patients
- PE rate was 30%in ICU patients but only 17% in ward patients
- PE rate was 24% in patients with D dimer above 1000 ng/ml
- PE rate was 22% in patients with CRP value above 50 mg/L
- Wells score was only documented in 36% cases, No significant difference identified when it was not performed.



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