

Incidence of pulmonary embolism among orthopaedic patients undergoing CTPA imaging in HSNZ in 2022

^{1,2}Norkhairul H; ¹NJ Shahid

¹Department of Orthopaedic, Hospital Sultanah Nurzahirah, Kuala Terengganu,

²Department of Orthopaedic, Universiti Sains Malaysia, Kubang Kerian.

INTRODUCTION:

Pulmonary embolism (PE) is one of the most common fatal complications in orthopaedic patients. Unfortunately, the incidence of PE in orthopaedic patients in HSNZ is poorly documented. Therefore, this cross-sectional study aims to determine the incidence of PE among our orthopaedic patients and identify subgroups at increased risk for PE.

METHODS:

The identification numbers of all orthopaedic patients who went for CTPA in 2022 were traced from the information technology unit, and their medical records from the Hospital Information System (HIS) were reviewed retrospectively. All orthopaedic patients who completed CTPA imaging in 2022 were included in this study.

RESULTS:

In 2022, CTPA imaging was done on 44 orthopaedic patients, and 36.4% of these patients were found to have PE. The majority of PE occurred in patients with multiple long bone fractures (37.5%), followed by patients with spine trauma (25%). All spine trauma patients who are suspected of having PE and undergo CTPA imaging are positive for PE. Despite receiving anticoagulant thromboembolism prophylaxis, a high percentage of patients (68.8%) still developed PE.

Table 1 showing result of CTPA

Number of patients (N)	Percentage
------------------------	------------

CTPA result

Positive	16	36.4%
Negative	28	63.6%

DISCUSSIONS:

The high true positive value (36.4%) for PE among CTPA requests in this study proved that CTPA requests by the orthopaedic team are justified and should be granted without delay in order to prevent further delays in treating patients. A greater proportion of PE in patients receiving anticoagulant prophylaxis warrants the combination of anticoagulation with mechanical prophylaxis. Given the high rate of PE among patients with spine trauma and multiple long bone fractures, a high index of suspicion for PE and a low threshold for performing CTPA imaging are warranted in this subgroup of patients who develop suggestive signs.

CONCLUSION:

A high incidence of PE among a subgroup of spine trauma and multiple long bone fracture patients warrants a CTPA, which is granted immediately upon request. Beside anticoagulant prophylaxis, mechanical thromboembolism prophylaxis should also be used extensively.

REFERENCES:

1. Tornetta P, Bogdan Y. Pulmonary embolism in orthopaedic patients: diagnosis and management. JAAOS-Journal of the American Academy of Orthopaedic Surgeons. 2012 Sep 1;20(9):586-95.