

EPIDEMIOLOGY

## **INCIDENTAL CANCER DETECTED DURING EMERGENCY DIAGNOSTIC WORK-UP FOR ACUTE PULMONARY EMBOLISM: A RETROSPECTIVE COHORT STUDY**

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**Background.** Pulmonary embolism (PE) may represent the first clinical manifestation of an occult malignancy. The prevalence of incidentally detected cancer during emergency department (ED) diagnostic work-up for acute PE remains incompletely characterized, particularly in the presence of provoking factors.

**Objectives.** To estimate the prevalence of incidental cancer detected during ED investigations for acute PE, to describe the cancer types, and to distinguish between provoked and unprovoked PE cases.

**Methods.** We conducted a retrospective observational study including 93 consecutive patients admitted with acute PE. Incidental cancer was defined as a previously unknown malignancy detected during diagnostic investigations performed for PE in the ED. PE was classified as provoked or unprovoked based on the presence of identifiable transient

or persistent risk factors.

**Results.** Incidental cancer was detected in 21 of 93 patients (22.6%). Lung cancer was the most frequent malignancy (33.3%), followed by colorectal cancer (23.8%). Notably, 19 of 21 incidental cancers (90.5%) occurred in patients with unprovoked PE, whereas only 2 cases (9.5%) were observed among patients with provoked PE. The prevalence of incidental cancer was 32.8% in unprovoked PE compared with 5.7% in provoked PE. Median age was 75 years (IQR 65–81), and 53.8% of patients were female.

**Conclusions.** In this cohort, nearly one quarter of patients presenting with acute PE had an incidentally detected malignancy during PE work-up, with the vast majority occurring in unprovoked PE setting. These findings reinforce the role of unprovoked PE as a potential early marker of occult cancer and support careful evaluation of incidental imaging findings in this population.