Abstract: **P5017**

**Factors associated with a negative D-dimer test in patients diagnosed with acute symptomatic pulmonary embolism**

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**On behalf:** FOCUS Investigators

**Topic(s):**
Venous Thromboembolism

**Citation:**

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**Background.** The recommended diagnostic strategy for suspected acute pulmonary embolism (PE) combines the assessment of pre-test probability, D-dimer level, and -if indicated- computed tomography pulmonary angiography.

**Purpose.** To evaluate the frequency and potential explanations for negative D-dimer tests in patients diagnosed with acute PE.

**Methods.** The multicentre Follow-up of Acute Pulmonary Embolism (FOCUS) cohort study prospectively enrolled 1,100 consecutive patients diagnosed with acute symptomatic PE; two-year follow-up is ongoing. The items of the Simplified revised Geneva Score and the D-dimer levels at diagnosis have been prospectively collected, but they did not necessarily guide management decisions. Quantitative D-dimer was measured on admission either by quantitative latex-based assays or enzyme-linked immunosorbent assays. A negative D-dimer was defined by fixed (0.50 µg/mL) or age-adjusted (age*0.01 µg/mL if age>50) cut-off.

**Results.** Using the fixed cut-off, a negative D-dimer was detected in 17 of 773 patients with ultimately diagnosed PE (miss rate 2.2% [95%CI 1.4-3.5]); using the age-adjusted cut-off, the test was discordant with the PE diagnosis in 24 patients (3.1% [2.1-4.6]). In Figure 1, red dots indicate negative D-dimer test by fixed cut-off and blue dots indicate additional negative D-dimer tests by age-adjusted cut-off.

In 448 (59%) patients post-hoc classified as PE-unlikely, 11 (2.5% [1.4-4.3]) and 14 (3.1% [1.9-5.2]) patients had a negative D-dimer using the two different cut-offs, respectively. Haemoptysis on admission, V/Q scan-based diagnosis, and chronic lung disease were associated with a discordant D-dimer, while an inverse association existed for concomitant DVT. In 7 (29%) PE cases with normal D-dimer, PE was verified to be subsegmental also in a post-hoc evaluation. Another seven (29%) patients were receiving anticoagulation at the time of D-dimer assessment.

**Conclusions.** Our results show that the frequency of discordance between a normal D-dimer test and the diagnosis of acute PE is low, but not negligible. One third of discordant findings were related to subsegmental PE. Physicians should be aware that the risk of obtaining a false-negative D-dimer might be higher in specific subgroups of patients.
Factors associated with a negative D-dimer test in patients diagnosed with acute symptomatic pulmonary embolism

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