Performance of age-adjusted D-dimer cut-off to rule out pulmonary embolism

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Mots-clés	D-dimer [9], pulmonary embolism [10], rule-out [11]
Résumé en anglais	Background: Age-adjusted D-dimer cut-off has recently been proposed to increase D-dimer usefulness in older patients suspected of pulmonary embolism (PE). Objective: We externally validated this age-adjusted D-dimer cut-off using different D-dimer assays in a multicenter sample of emergency department patients. Methods: Secondary analysis of three prospectively collected databases (two European, one American) of patients suspected of having PE. D-dimer performance for ruling out PE was assessed by calculating negative likelihood ratio (nLR) for D-dimer with age-adjusted D-dimer cut-off (< age × 10 in patients over 50 years) and with conventional cut-off (< 500 µg dL−1). Test efficiency was assessed by the number needed to test (NNT) to rule out PE in one patient.Results: Among 4537 patients included, overall PE prevalence was 10.1%. In the overall population, nLR was 0.06 (95% confidence interval, 0.03–0.09) with conventional cut-off and 0.08 (0.05–0.12) with age-adjusted cut-off. Using age-adjusted cut-off, nLR was 0.08, 0.09 and 0.06 for Vidas®, Liatest® and MDA® assays, respectively. Use of age-adjusted cut-off produced a favorable effect on NNT in the elderly; the greatest decrease was observed in patients > 75 years: NTT halved from 8.1 to 3.6. The proportion of patients over 75 years with normal D-dimer was doubled (27.9% vs. 12.3%). Conclusions: Our study shows that age-adjusted D-dimer had low nLR, allowing its use as a rule-out PE strategy in non-high pretest clinical probability patients, as well as using Vidas®, Liatest® or MDA® assays. This age-adjusted cut-off increased clinical usefulness of D-dimer in older patients. A large prospective study is required to confirm these results.
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