

Study examines use of age-adjusted D-dimer levels to exclude lung blood clots

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Using a patient's age to raise the threshold for an abnormal result of a blood test used to assess patients with a suspected pulmonary embolism (blood clot in lungs) appeared to be safe and led to fewer healthy patients with the diagnosis, according to a study in the March 19 issue of *JAMA*.

D-dimer is a breakdown product of a blood clot, and measuring D-dimer levels is one way doctors exclude a diagnosis of [pulmonary embolism](#) (PE). Several studies have shown that D-dimer levels increase with [age](#). As a result, the proportion of healthy [patients](#) with abnormal test results (above 500 µg/L for most available commercial tests) increases with age, limiting the test's clinical usefulness in older people, according to background information in the article.

Marc Righini, M.D., of Geneva University Hospital, Geneva, Switzerland, and colleagues examined whether an age-adjusted D-dimer threshold, which involved redefining the test value that distinguished abnormal and normal results by multiplying the patient's age by 10 in patients 50 years or older, safely excluded the diagnosis of PE in elderly patients with suspected PE. The study, conducted at 19 centers in Belgium, France, the Netherlands, and Switzerland between January 2010 and February 2013, included outpatients who underwent a clinical probability assessment (measured by one of two scoring systems based on risk factors and clinical findings), D-dimer measurement, and computed tomography pulmonary angiography (CTPA; image of lungs).

Of the 3,346 patients with suspected PE included in the analysis, the prevalence of PE was 19 percent. The researchers found that combining the probability assessment with adjustment of the D-dimer cutoff for patient age safely excluded the diagnosis of PE and was associated with a low likelihood of subsequent PE or other venous blood clot. In [elderly patients](#), there was an increase in the proportion of patients in whom PE could be excluded without further imaging.

"Future studies should assess the utility of the age-adjusted cutoff in clinical practice. Whether the age-adjusted cutoff can result in improved cost-effectiveness or quality of care remains to be demonstrated," the authors conclude.

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