

Obstetrics

Diagnosing Pulmonary Embolism in Pregnancy Using Computed-Tomographic Angiography or Ventilation-Perfusion.

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OBJECTIVE: To estimate the rate of nondiagnosis for patients who initially undergo computed-tomographic angiography compared with those who undergo ventilation-perfusion imaging to diagnose pulmonary embolism in pregnancy.

METHODS: This was a retrospective cohort study of all women consecutively evaluated from 2001-2006 for clinical suspicion of pulmonary embolism who were pregnant or 6 weeks postpartum and underwent at least computed-tomographic angiography or ventilation-perfusion scan. Charts were abstracted for history, clinical presentation, examination, imaging, and pregnancy and maternal outcomes. Women who underwent computed-tomographic angiography for initial diagnosis were compared with women who underwent ventilation-perfusion. Primary outcome was defined as a nondiagnostic study: nondiagnostic for pulmonary embolism in the computed-tomographic angiography group, or "low or intermediate probability" in the ventilation-perfusion group. Univariable, bivariable, and multivariable analyses were performed.

RESULTS: Of 304 women with a clinical suspicion of pulmonary embolism, initial diagnosis was sought by computed-tomographic angiography in 108 (35.1%) and by ventilation-perfusion in 196 (64.9%) women. Women who underwent computed-tomographic angiography tended to have a slightly higher rate of nondiagnostic study (17.0% compared with 13.2%, $P=.38$). Examining the subgroup of women with a normal chest X-ray, computed-tomographic angiography was much more likely to yield a nondiagnostic result than ventilation-perfusion, even after adjusting for relevant confounding effects (30.0% compared with 5.6%, adjusted odds ratio 5.4, 95% confidence interval 1.4-20.1, $P<.01$).

CONCLUSION: Pregnant or postpartum women with clinical suspicion of a pulmonary embolism and a normal chest X-ray are more likely to have a diagnostic study from a ventilation-perfusion scan compared with a computed-tomographic angiography. Evidence supports computed-tomographic angiography as a better initial test than ventilation-perfusion in patients with an abnormal chest X-ray.