Dual section helical computed tomography had high sensitivity and specificity for detecting acute pulmonary embolism


**QUESTION:** In patients with suspected acute pulmonary embolism (PE), what is the diagnostic accuracy of dual section helical computed tomography (CT)?

**Test characteristics for dual section helical computed tomography to detect pulmonary embolism**

<table>
<thead>
<tr>
<th>Sensitivity (95% CI)</th>
<th>Specificity (CI)</th>
<th>+LR</th>
<th>−LR</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% (86 to 99)</td>
<td>97% (91 to 99)</td>
<td>29.1</td>
<td>0.05</td>
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</tbody>
</table>

*Diagnostic terms defined in glossary; CIs and LRs calculated from data in article.

**COMMENTARY**

The diagnosis of PE remains a problem. Diagnostic algorithms rely on tests that are sensitive but not specific (lung scans), invasive and expensive (pulmonary arteriography), or insensitive for calf vein thrombi and that therefore must be repeated (compression ultrasonography).

Helical CT is available and safe and often provides alternative diagnoses. Unfortunately, the role of helical CT for the diagnosis of PE remains uncertain. Many experts believe that helical CT can diagnose PE but that a negative helical CT scan cannot rule out a diagnosis. A critical issue is the insensitivity of helical CT for PE that is limited to subsegmental vessels. Thus, it may not be safe to withhold anticoagulants from patients with normal helical computed tomograms.

Dual section helical CT uses a double array of detectors to enhance the resolution of pulmonary vessels. Qanadli et al compared dual section helical CT with pulmonary arteriography, using a methodologically sound study design. The investigators report high sensitivity and specificity for the diagnosis of PE with a high degree of agreement between independent scan readers. They also detected thromboembolism, limited to subsegmental vessels, in 3 of 4 patients. Is dual section helical CT ready for “prime time” as the initial diagnostic test for PE? The answer is “no.” The study by Qanadli et al is promising and important, but others must reproduce the results. Furthermore, clinical studies must document outcomes for untreated patients with a negative dual section helical computed tomogram.

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