Pulmonary Embolism Evaluation Guidelines

Department of Emergency Medicine

Overview

I. Assess Pretest Probability/ Clinical Suspicion (Modified Wells Criteria)

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
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<tbody>
<tr>
<td>+3</td>
<td>Clinical deep venous thrombosis (DVT): objective tenderness or swelling</td>
</tr>
<tr>
<td>+1.5</td>
<td>Heart rate &gt;100 beats/min</td>
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<tr>
<td>+1.5</td>
<td>Immobilization &gt;3 days or major surgery within 4 weeks</td>
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<tr>
<td>+1.5</td>
<td>Previous DVT or pulmonary embolism (PE)</td>
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<tr>
<td>+1</td>
<td>Hemoptysis</td>
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<tr>
<td>+1</td>
<td>Malignancy</td>
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<tr>
<td>+3</td>
<td>PE as likely, or more likely than alternative diagnosis</td>
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</tbody>
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Modified Wells Score Total

>6: PE highly probable
>4: PE likely
≤4: PE unlikely

II. Testing Strategy

Wells Score ≤ 4
- order D-dimer
- if negative, Wells Score ≤ 4; negative d-dimer still reliably excludes PE. In second or third trimester, go directly to CTA.

Wells Score > 4
- order CT angiogram of chest (CTA)*
- if positive, CT Angio Chest
  - if negative, Wells ≤ 6
    - Discharge Patient
  - if positive, Wells > 6
    - Doppler US Legs
      - if positive, Treat for DVT
      - if negative, Treat for PE

D-dimer test
- if positive, Discharge Patient
- if negative, Wells ≤ 6
  - Discharge Patient
  - if positive, Wells > 6
    - Doppler US Legs
      - if positive, Treat for DVT
      - if negative, Treat for PE

CT Angio Chest
- if positive, Treat for PE
- if negative, Wells > 6
  - if negative, Wells ≤ 6
    - Discharge Patient
  - if positive, Wells > 6
    - Doppler US Legs
      - if positive, Treat for DVT
      - if negative, Treat for PE

*Mercy radiology emergency dye allergy protocol is hydrocortisone (Solu-Cortef) 200 mg 4 hours prior and diphenhydramine (Benadryl) 50 mg 1 hour prior to contrast.

Pregnant women of all gestational ages:
- may screen with US prior to CTA
- if CTA done in first trimester, have patient inform obstetrician about risk of neonatal hypothyroidism.

For pregnant patients in first trimester, Wells Score ≤ 4; negative d-dimer still reliably excludes PE. In second or third trimester, go directly to CTA.


