Review: Sensitivities and specificities vary for different diagnostic tests of gout

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**DIAGNOSIS**

**Review: Sensitivities and specificities vary for different diagnostic tests of gout**


Clinical impact ratings GP/FP/Primary care ☆☆☆☆☆ IM/Ambulatory care ☆☆☆☆☆☆ Rheumatology ☆☆☆☆☆☆☆☆

What are the diagnostic tests and their test properties for the diagnosis of gout?

**METHODS**


Study selection and assessment: an expert panel of rheumatologists reached a consensus on 10 key evidence-based recommendations for the diagnosis of gout using the Delphi technique. Studies assessing these recommendations and the clinical diagnosis of gout or hyperuricaemia, if serum uric acid was measured as a risk factor for gout, were included. Case reports, review articles, editorials, commentaries, and studies on animals or healthy individuals were excluded. Quality assessment of individual studies was based on study design.

Outcomes: sensitivity, specificity, and likelihood ratio (LR).

**MAIN RESULTS**

181 studies met the selection criteria: 83 for diagnosis, 86 for management, and 12 for both; 3 case control studies were used or combined for the diagnostic test table below. The table summarises the sensitivities, specificities, and LRs for some of the diagnostic tests of gout. Among them, urate crystals, podagra, and tophi had LRs >10. Most studies used a clinical diagnosis of gout or the presence of uric acid crystals on arthrocentesis as the diagnostic gold standard.

**CONCLUSION**

Sensitivities and specificities vary for different diagnostic tests of gout.

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**Operating characteristics of various diagnostic tests for gout***

<table>
<thead>
<tr>
<th>Diagnostic test</th>
<th>Number of studies (n)</th>
<th>Sensitivity (95% CI)</th>
<th>Specificity (CI)</th>
<th>LR (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrupt pain/swelling</td>
<td>1 (820)</td>
<td>98% (95 to 102)</td>
<td>23% (10 to 35)</td>
<td>1.3 (1.1 to 1.5)</td>
</tr>
<tr>
<td>Erythema</td>
<td>1 (790)</td>
<td>92% (88 to 96)</td>
<td>62% (58 to 66)</td>
<td>2.4 (2.2 to 2.7)</td>
</tr>
<tr>
<td>Podagra</td>
<td>2 (1681)</td>
<td>96% (91 to 101)</td>
<td>97% (96 to 98)</td>
<td>31 (21 to 46)</td>
</tr>
<tr>
<td>Definite tophus</td>
<td>2 (1685)</td>
<td>30% (24 to 36)</td>
<td>99% (99 to 100)</td>
<td>40 (21 to 76)</td>
</tr>
<tr>
<td>Possible tophus</td>
<td>2 (1536)</td>
<td>20% (13 to 27)</td>
<td>100% (99 to 100)</td>
<td>34 (11 to 108)</td>
</tr>
<tr>
<td>MSU crystals (acute attack)</td>
<td>1 (456)</td>
<td>84% (77 to 92)</td>
<td>100% (99 to 100)</td>
<td>567 (35 to 9054)</td>
</tr>
<tr>
<td>MSU crystals (intercritical period)</td>
<td>1 (33)</td>
<td>70% (50 to 87)</td>
<td>95% (83 to 108)</td>
<td>15 (1 to 230)</td>
</tr>
<tr>
<td>Hyperuricaemia</td>
<td>1 (820)</td>
<td>92% (88 to 95)</td>
<td>91% (88 to 93)</td>
<td>9.7 (7.4 to 13)</td>
</tr>
<tr>
<td>Radiographic asymmetrical swelling</td>
<td>1 (719)</td>
<td>42% (33 to 51)</td>
<td>90% (87 to 92)</td>
<td>4.1 (3.0 to 5.7)</td>
</tr>
<tr>
<td>Radiographic subcortical cysts, no erosion</td>
<td>1 (716)</td>
<td>12% (6 to 18)</td>
<td>98% (97 to 99)</td>
<td>6.4 (3.0 to 14)</td>
</tr>
</tbody>
</table>

*LR = likelihood ratio; MSU = monosodium urate. Diagnostic terms and CI defined in glossary.
† > mean plus 2 standard deviations.