Just wait a minute: Point-of-care testing for Group A Streptococcal pharyngitis

Clinical Question: In patients with sore throat, how accurate are point-of-care tests in the diagnosis of Group A beta-hemolytic streptococcal (GABHS) pharyngitis?

Bottom Line: Point-of-care testing, including rapid antigen detection tests and newer nucleic acid detection tests for GABHS pharyngitis are useful for ruling in a diagnosis of GABHS when positive (specificity 95%-99%). Nucleic acid detection tests may be more sensitive than rapid antigen detection tests (92% versus 85%). While immediate testing and treatment may not always be required, populations at increased risk of GABHS complications, such as Canada’s Indigenous populations, are more likely to benefit.

Evidence:
- Rapid antigen detection tests versus culture (3 systematic reviews, 43-98 studies including 18,464-101,121 patients):¹⁻³
  - Sensitivity consistently ~85%, specificity consistently ~95%.¹⁻³
  - Positive likelihood ratio (LR+) 16.8, Negative likelihood ratio (LR-) 0.16.
- Nucleic acid detection tests versus culture:
  - 1 systematic review, 6 studies (1937 patients):³
    - Sensitivity=92%, specificity=99%.
    - LR+ 92, LR- 0.08.
  - Evidence published after above reviews:⁴⁻⁶
    - Sensitivity=89-100%, specificity=91-100%.
- No significant difference in point-of-care performance between adult and pediatric populations.¹⁻³
- Limitations: included studies had high heterogeneity, rapid testing not currently funded publicly.

Context:
- LR+ above 10 indicates test is a good help at ruling-in diagnosis.
- Clinical decision rules (i.e. CENTOR) have limited predictive value for diagnosing GABHS pharyngitis:⁷
  - Meta-analysis (11 studies):⁷ Sensitivity=49% specificity=82%, LR+ 2.68.
Empiric treatment for sore throat is common (~60%). Point-of-care testing may improve appropriate antibiotic prescribing.

Antibiotics for GABHS significantly reduces:

- Sore throat at day three: 44% versus 71%, number needed to treat (NNT)=4.
- Peritonsillar abscess 0.1% versus 2%, NNT=47.
- Rheumatic fever 0.6% versus 1.7%, NNT=90.
  (rheumatic fever data from pre-1950, incidence has declined significantly in developed countries).

Populations with higher incidence of GABHS complications, such as Canada’s Indigenous population, are more likely to benefit from antibiotic treatment.

Many international guidelines consider GABHS pharyngitis self-limiting and do not recommend antibiotic treatment.

Delayed antibiotic prescriptions decrease antibiotic utilization with no significant impact on symptom duration, or clinical outcomes, in GABHS pharyngitis.

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References:

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