REDUCING ANTIBIOTIC USE WITH FAST MULTIPLEX PCR

Multiplex PCR testing is definitive for distinguishing Group A Streptococcal from viral pharyngitis in children, reducing unnecessary antibiotic use. The parallel rise in invasive GAS cases and coinfections, particularly GAS with common respiratory viruses, underscores the importance of testing multiple pathogens to ensure appropriate care.

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Why do PCR tests for agents causing pharyngitis in children best reduce unnecessary antibiotic use?

While there are many causes, only Group A Streptococcus (GAS) pharyngitis in children necessitates strong antibiotic recommendation to prevent severe immune complications.

The main challenge is to differentiate pharyngitis caused by GAS from the viral ones.

Viral and GAS pharyngitis share symptoms, making testing crucial for correct treatment.
The use of point-of-care tests in patients with sore throats strongly reduces the misuse of antibiotics in clinical practice.

Rapid antigen tests lack sensitivity; thus, confirm negative results with throat culture or PCR, definitive for diagnosing streptococcal pharyngitis.

Since GAS causes 20%-30% of pharyngitis in children, with most others being viral, 70%-80% need confirmation through culture or PCR.

PCR results are quick, under 1 hour, while cultures take 24-48 hours, making PCR ideal for routine diagnostics if costs are comparable to rapid tests.

Why is detecting dual infectious agents important for treating respiratory infections?

The worldwide statistics based on the multiplex PCR results have shown that respiratory pathogens rarely appear alone.

The WHO in Europe observed an increase in children's invasive GAS infections, with deaths fourfold since September 2022. This may be linked to the rise in respiratory viruses, as virus-GAS coinfections heighten invasive GAS disease risk.

Post-pandemic, over 90% of respiratory viruses identified include SARS-CoV-2, Influenza A/B, RSV A/B, Rhinovirus, and Adenovirus, all of which should be tested alongside GAS.

References

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