



Positive Urinary Antigens: It's NOT a UTI

Streptococcus pneumoniae and *Legionella pneumophila* urine antigen tests are often ordered in hospitals. What do these tests mean and how do you use them? Read on to learn more!

What is a urine antigen test?

Antigens are substances that bodies create antibodies against. Urine antigen tests can detect the presence of antigens that are shed in the urine. These are not cultures and do not indicate growth of the organism in the urine.

Do positive urine antigen tests indicate a UTI?

No, a positive urine antigen test means that either *S. pneumoniae* or *L. pneumophila* is present **somewhere** in the patient's body. These organisms are common causes of community-acquired pneumonia (CAP), not UTIs, and are therefore used most commonly in the workup for CAP.

Will a urine antigen test be positive in a patient with a *history* of an infection?

False positives are possible, though antigens are not the same as antibodies and therefore will not circulate indefinitely. False positive pneumococcal urinary antigen tests may occur within 48 hours of pneumococcal vaccination.¹ Approximately 35% of patients continue to test positive for *S. pneumoniae* up to two months after pneumococcal disease while 10% of *Legionella* patients test positive more than two months later.^{2,3} False positives for *Legionella* have been reported in patients with serum sickness and may occur with the presence of rheumatoid factor.⁴

How do you interpret urinary antigen tests?

Negative *L. pneumophila* urine antigen tests do not exclude an infection caused by *L. pneumophila*. Most *Legionella* urinary antigen tests only identify *L. pneumophila* serotype 1, which makes up 80-95% of cases in the USA.⁵ Pneumococcal urinary antigen tests are more sensitive as they detect C-polysaccharide, an antigen present in all serotypes.

With all these limitations, how are urine antigen tests recommended to be used?

The 2019 ATS/IDSA Community-acquired Pneumonia (CAP) guidelines suggest **AGAINST routinely** testing for *S. pneumoniae* and *L. pneumophila* urinary antigens except in patients with **severe** CAP. *Legionella* urinary antigen should also be tested in cases associated with outbreaks, recent travel, or epidemiological factors.¹

Key Takeaway:

Urinary antigen testing for *S. pneumoniae* and *L. pneumophila* can help identify common pneumonia pathogens, but do not indicate a UTI. These tests have limitations and therefore are not routinely recommended, but may be useful in certain situations.

References:

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