

Clin Infect Dis. 2009 May 1;48:1244-9.

### **Comparison of Laboratory Diagnostic Procedures for Detection of *Mycoplasma pneumoniae* in Community Outbreaks**

Thurman KA, Walter ND, Schwartz SB, Mitchell SL, Dillon MT, Baughman AL, Deutscher M, Fulton JP, Tongren JE, Hicks LA, Winchell JM.

**Background:** *Mycoplasma pneumoniae* continues to be a significant cause of community-acquired pneumonia (CAP). A more definitive methodology for reliable detection of *M. pneumoniae* is needed to identify outbreaks and to prevent potentially fatal extrapulmonary complications.

**Methods:** We analyzed 2 outbreaks of CAP due to *M. pneumoniae*. Nasopharyngeal and/or oropharyngeal swab specimens and serum samples were obtained from persons with clinically defined cases, household contacts, and asymptomatic individuals. Real-time polymerase chain reaction (PCR) for *M. pneumoniae* was performed on all swab specimens, and the diagnostic utility was compared with that of 2 commercially available serologic test kits.

**Results:** For cases, 21% yielded positive results with real-time PCR, whereas 81% and 54% yielded positive results with the immunoglobulin M and immunoglobulin G/immunoglobulin M serologic tests, respectively. For noncases, 1.8% yielded positive results with real-time PCR, whereas 63% and 79% yielded serologically positive results with the immunoglobulin M and immunoglobulin G/immunoglobulin M kits, respectively. The sensitivity of real-time PCR decreased as the duration between symptom onset and sample collection increased, with a peak sensitivity of 48% at 0-21 days. Real time PCR may be most sensitive when collected within 21 days of symptoms. A specificity of 43% for the immunoglobulin M antibody detection assay was observed for persons aged 10-18 years, but the sensitivity increased to 82% for persons aged 19 years. The IgM antibody Meridian test was more sensitive than the Remel test.

**Discussion:** No single test proved reliable for the identification of an outbreak of CAP due to *M. pneumoniae*. A combination of testing methodologies proved to be the most reliable approach for identification of outbreaks of CAP due to *M. pneumoniae*, especially in the absence of other suspected respiratory pathogens.

Editorial Comment by Victor L Yu : Laboratory diagnosis for *Mycoplasma pneumoniae* in sporadic pneumonia (as opposed to outbreak) cases is unreliable. Serologic tests can be used but acute and convalescent samples need to be drawn to allow a 4-fold increase in antibody titer rise. Definitive diagnosis for *M. pneumoniae* remains elusive.

PMID: 19331586 [PubMed - indexed for MEDLINE]