E033

2-hour Educational Workshop

Diagnosis of Mycoplasma pneumoniae infections

M. leven[1]

[1], *Edegem, Belgium*

Mycoplasma pneumoniae (*M. pneumoniae*) is recognized as a common cause of lower respiratory tract infections (LTRI) including community-acquired pneumonia (CAP) occurring worldwide both in children and in adults. The proportion of LRTI, including CAP, associated with *M. pneumoniae* infection during the past 10 years has ranged from 0% to more than 50%, varying with age and the geographic location of the population examined but also with the diagnostic methods used. The true role of *M. pneumoniae* in RTIs remains a challenge given the wide variation of data from studies with equally wide variation of, and lack of standardized diagnostic methods. Correct and rapid diagnosis of *M. pneumonia*e infections is however critical to initiate appropriate antibiotic treatment. Treatment with macrolide antibiotics is recommended. Diagnostic uncertainty can lead to inappropriate antibiotic prescribing, which may worsen clinical prognosis and increase antibiotic resistance.

Because of the widespread availability of commercial tests, in particular EIAs, and the ease of obtaining a serum specimen, serological methods still play a predominant role in clinical practice to diagnose *M. pneumoniae* infections. However, the performances of these tests depend on several factors resulting in a poor agreement between different tests. Consequently, the choice of the serological test has important implications when performing seroepidemiological studies and when using these tests for the management of individual patients.

Over the past few years, nucleic acid amplification techniques (NAATs), especially real-time PCR, have provided significant improvements in the diagnosis of RTI, resulting from both improved sensitivity and specificity, and the production of very rapid results. However, as for serology, lack of standardization has resulted in a variability of interlaboratory test performances: differences in the choice of the target, use of monoplex versus multiplex formats, choice of conventional, nested, or real-time NAATs influence the performances of the tests. Recently developed tests combine the simultaneous detection of the organism and mutations associated with macrolide resistance directly in clinical specimens.

The availability of the very sensitive NAATs has in recent years also put the serological tests in their right perspective and allow a better interpretation of the serological test results and their limitations such as the low sensitivity of IgM antibodies in acute phase specimens and importance of the delay between two serum samples. Data from recent studies using PCR based methods and serology in different patient populations from around the world are summarized and the role of both techniques will be discussed.