Comparative studies for the serodiagnosis of *Chlamydophila* and *Mycoplasma pneumoniae* infections

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*Mycoplasma pneumoniae* and *Chlamydophila pneumoniae* have worldwide distribution and infect the upper and lower respiratory tract. Serology is still the most widely used method to diagnose both infections, even if its interpretation is difficult.

**OBJECTIVES**

*M. pneumoniae* and *C. pneumoniae* serology testing is currently carried out in our institute by microplate analyzer (ETIMax® 3000, DiaSorin), used together with Virion *M. pneumoniae* antibodies assays using native antigens, as well as with Medac total *Chlamydia* and *C. pneumoniae* antibodies assays. The objectives of this study are to evaluate *Mycoplasma* antibody kits using recombinant antigens, to improve specificity of results, and to review our current algorithm for *Chlamydia* serology.

**METHODS**

One hundred and fifteen sera were tested with *M. pneumoniae* antibody kits from Virion, Medac, Savyon and AniLabsystems. HA was used as reference method to confirm discordant results. Sixty-one sera from 52 patients, including 15 with documented respiratory infection, were tested with *C. pneumoniae* IgA and IgG kits from Medac, Savyon and Euroimmun. MIF was used as reference method to confirm discordant results.

**RESULTS**

Agreement for at least 3 results or confirmation with HA established reliable diagnosis. Sensitivity was 100%, 100%, 90% and 90% and specificity was 92%, 96%, 100% and 96% for *M. pneumoniae* IgM from Virion, Medac, Savyon, and AniLabsystems kits respectively. Medac and Savyon *M. pneumoniae* IgG kits discriminated healthy from sick patients better than did Virion kit; agreement between Medac and Savyon was 89.5%, 91.4% and 81.9% for IgM, IgA and IgG respectively. Sensitivity of Medac, Savyon and Euroimmun *C. pneumoniae* IgA was 92%, 100%, 59%; accuracy, using MIF as reference test, was 90%, 94% and 67% respectively. Agreement between Medac and Savyon was 93.1%. Sensitivity of Medac, Savyon and Euroimmun for *C. pneumoniae* IgG was 100%, 100% and 80%; accuracy was 97%, 87% and 77% respectively.

**CONCLUSION**

Savyon *M. pneumoniae* kits show less or no threshold results compared with the 3 other methods. The IgG assay discriminates sick from healthy patients well, with good correlation with the Medac kit. To facilitate interpretation of the results, we decided to perform *C. pneumoniae* Savyon IgA kit, well correlated with MIF, while Medac *C. pneumoniae* IgG kit was preferred because of better specificity and quantitative determination.