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Rubrique: “Diagnostic/laboratory methods (other than molecular)”

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

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Mycoplasma pneumoniae and *Chlamydomphila 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. 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.