

SEROLOGIC DIAGNOSIS OF LEGIONELLOSIS: EVALUATION OF A RAPID SYSTEM

Meacci M., Pozzi L., Chiucini M., Petocchi V., Apice MG., Rumpianesi F.

Struttura Complessa di Microbiologia e Virologia, Azienda Ospedaliero-Universitaria, Modena

Introduction. Isolation in culture media and urinary antigen detection are the methods of choice for the identification of *Legionella*. However, the detection of antibodies appears to be a further aid for a definitive diagnosis of infection. Aim of this study was to evaluate two commercial methods for the determination of specific IgG and IgM for the serological diagnosis of infection by *Legionella pneumophila*.

Methods. The study was performed at the Microbiology and Virology Laboratory of the Policlinico of Modena. A total of 144 serum samples were analyzed: 31 from patients with clinically diagnosed Legionnaires' disease, confirmed by the detection of the urinary antigen, and 113 from healthy blood donors. The dosage of specific IgG and IgM was performed using the Chorus *Legionella pneumophila* serotype 1 IgG, Chorus *Legionella pneumophila* serotype 1-6 IgG and Chorus *Legionella pneumophila* IgM kits (Diesse Diagnostica Senese SpA, Monteriggioni, Italy) and the ELISA kit *Legionella pneumophila* 1-7 IgG/IgM (Institut Virion\Serion GmbH, Würzburg, Germany) currently in use in our laboratory. Results obtained with both methods have been compared and samples showing discordant results have been further analyzed by a home brew Immuno-blot method.

Results. With regard to the determination of IgG, the Chorus system showed a sensitivity of 90,9 and a specificity of 100 while the Serion kit showed a sensitivity of 81,8 and a specificity of 98,5. For the determination of IgM, Chorus showed a sensitivity of 89,3 and a specificity of 100 while Serion showed a sensitivity of 46,4 and a specificity of 100.0.

Discussion and conclusions. The data, although limited to a low number of cases, showed a greater sensitivity of the Chorus tests compared to Serion's, especially in the evaluation of the IgM. Overall, the greater sensitivity observed for the Chorus tests was confirmed both by clinical data and by the presence of the urinary antigen. Sera with discordant results, positive by the Chorus method and negative for SERION, have shown a specific immunoreactivity by immunoblotting. A high sensitivity would allow an earlier detection of the seroconversion, that can be useful in situations of low prevalence of the disease or in cases of absence of antigenuria. In conclusion we can say that the serological tests that have a high specificity and sensitivity are reliable and represent an aid for a complete diagnosis of *Legionella pneumophila* infection.