

Detection of Legionella pneumophila by nested PCR-RFLP and ELISA on urine specimens of pregnant women with respiratory infections

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Abstract

Introduction: Pneumonia during pregnancy can induce serious consequences to the mother and the fetus, therefore its diagnosis and therapy is very important. There are few published articles on Legionella infection prevalence during pregnancy. In patients with Legionellosis, bacterial LPS and DNA are excreted into urine for extended periods, so combination of PCR and ELISA methods would be a good diagnostic tool. This research was done to determine the prevalence of *L. pneumophila* in pregnant women with respiratory infections.

Materials & Methods: This is a cross-sectional study on 95 pregnant women with respiratory infection carried out during winter to summer 2006. Presence of Legionella infection was confirmed by nested PCR-RFLP and antigen detection in urine specimens by ELISA method. The data were analyzed by SPSS, version 13, by using independent t tests, Fisher's exact test, χ^2 , a logistic model and McNemar's test, while considering $p<0.05$ as significant.

Results: The prevalence of infection using PCR was 22.1% (CI=14.1%-30.1%) and by ELISA it was 4.2% (CI=2%-8.2%); this difference was statistically significant ($p<0.005$). The most prevalent clinical features were Cough (56.8%), headache (54.7%), abdominal pain (38.9%), chills (35.8%), fever (22.1%) and diarrhea (8.4%). There were significant statistical relationships between cases with a positive CRP and fever, chills and abdominal pain and previous liver or renal problems ($p<0.05$, $p<0.001$). There were significant relationships between fever and chills with ELISA results ($p<0.05$) but no relationships with other variables.

Conclusion: There was a considerable prevalence of this infection in the studied population (22.1%). It seems that performing PCR & ELISA tests on urine sample is suitable in detecting Legionella species and it can provide results in a less than a day_ a great help in the diagnosis and treatment of pneumonia especially during pregnancy.

Key Words: Legionella pneumophila, Pregnancy, Pneumonia, Molecular, ELISA.

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