

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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