The study of serum antibody level in patients with *Acinetobacter baumanni* infection and comparing with healthy people and intensive care unit personnel

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Abstract:

Background and Aim: Nosocomial infections with bacterial origin are considered as one of the most dangerous threats to global health. Among the most important causes of bacterial infections, the main concerns of physicians and staff in the ICU is *Acinetobacter baumanni*. The purpose of this study was to investigate the presence of serum antibodies against the bacteria in patients, ICU nurses and healthy people.

Materials and Methods: In this study, 70 serum samples from Masih Daneshvari and Laleh hospital in three groups with 20 samples from patients with positive sputum culture Acinetobacter, 20 samples from ICU nurses and 30 samples from normal controls have been collected. Bacterial isolates obtained from the hospital cultured and PCR based on the presence of OXA-51 gene performed and detection of bacteria with a genetic test has been confirmed and stored. Dot blot test for screening has been performed and the presence of antibodies against *Acinetobacter baumanni* were measured by ELISA and has been approved.

Results: Immunoblotting results showed that 8 out of 20 nurses and 8 cases of patients, had antibodies against *Acinetobacter baumanni* bacteria at serum dilutions 1/50 and all controls were negative in the serum levels of antibodies. In the ELISA test, at 1/50 serum dilutions titer and concentrations of 0.5 micrograms per microliter antigen, 19 cases of nurses and 9 patients had positive titers of antibodies. All healthy sample were negative. Cut off by normal controls associated with nosocomial infections were recorded.

Conclusion: serum levels of antibodies may be used as a prognostic tool in *Acinetobacter baumanni* infection. Complementary study is recommended for future attempt in vaccine design and passive immunotherapy.

Keywords: Nosocomial infections, *Acinetobacter baumanni*, ELISA, Dot blot, Immunization

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