

Comparison of Immunoblotting and ELISA for Detection of Anti-Ganglioside Antibodies in Children with Guillain-Barre Syndrome

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ABSTRACT

Background: Anti-ganglioside antibody assays are widely used for diagnosis of auto-immune peripheral neuropathies. **Objective:** This study aimed to determine serum levels of anti-ganglioside antibodies in children with Guillain-Barre syndrome by immunoblotting technique and compare the results with those obtained by ELISA method. **Method:** In this investigation, 50 children with Guillain-Barre syndrome (GBS) who were admitted from July 2006 to July 2008, to Tabriz Children's hospital in the north-west of Iran were studied. 30 children admitted for various other reasons than GBS were randomly selected as a control group. The levels of anti-ganglioside antibodies in serum were measured by ELISA and immunoblotting methods using commercial kits. **Results:** Anti-ganglioside antibodies (IgG) were detected in 16 (32%) GBS patients and in 1 (3.3%) control using ELISA assay. However, by employing immunoblotting technique, antibodies against seven gangliosides were found positive in 28 (56%) GBS patients and none in the control group. The sensitivities of immunoblotting and ELISA methods were 56% and 32% and their specificities were 100% and 97%, respectively ($p < 0.001$). **Conclusion:** According to the clinical criteria of GBS, the specificity and sensitivity of immunoblotting was better than those of ELISA. It is important to notice that the immunoblotting method is able to measure the seven types of antibodies (GM1, GM2, GM3, GD1a, GD1b, GT1b, and GQ1b) simultaneously and it is an easy, routine method with a lower cost.

Keywords: Antibody, ELISA, Ganglioside, Guillain-Barre, Immunoblotting

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