

Comparative of three methods (ELISA, MAIPA and flow cytometry) to determine anti-platelet antibody in children with ITP

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Abstract

Immune (idiopathic) thrombocytopenic purpura (ITP) is an autoimmune disease characterized by the increased anti-platelet antibodies in the patient's sera and decreased platelets in the blood circulation. This study has determined and characterized the antiplatelet glycoproteins in children with ITP. Thirty eight children, who were hospitalized with clinical signs of ITP in Mofid Children Hospital (Tehran, Iran) during 18 months, went under our clinical studies in a research project. ELISA, Flow cytometry and MAIPA (Monoclonal Antibody Immobilization of Platelet Antigens) methods were employed to determine serum anti-platelet antibodies level. The anti-platelet antibodies level above mean + 3SD of control group was assumed as positive. The platelet counts ranged between $2 \times 10^9/L$ and $100 \times 10^9/L$. Among the patients 63.5% of them were anti-platelet antibodies positive with ELISA method. Results of platelet lysate method showed that 51.7% of patients had antibodies against platelet antigens. Antibody against platelet GPIIb/IIIa, GPIb/IX and GPIa/IIa using MAIPA method were 48%, 54% and 25% respectively. In flow cytometry 62% of patients showed anti-platelet antibodies. The comparison of three methods shows that since MAIPA is the specific method for the detection of very small amount of antibody against glycoprotein antigens, it has the advantage of differentiating between immune and non-immune thrombocytopenia.

