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The pharmacology of human polyvalent immunoglobulins in patients with primary immunodeficiency diseases

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Abstract

Introduction: Primary immunodeficiency diseases encompass more than 400 molecularly defined disorders that affect the development and/or function of the immune system. Human intravenous immunoglobulin (IVIG) has been used in the treatment of many diseases, and its effects include complex mechanisms. Although the specific indications for IVIG are limited, it has been shown to be useful in many diseases in clinical practice.

In this study, the use of IVIG, its mechanisms of action, indications and side effects were discussed, and then the research question was answered:

Is the therapeutic dose of 0.5 g/kg that all patients receive sufficient to provide a protective residual dose?

Methods: This study took place over a period of 3 months in the Infectious Diseases and Clinical Immunology Unit at the IBN ROCHD Children's Hospital in Casablanca. We collected 25 Moroccan children with DIP who were treated with IVIG (a monthly dose of 0.5 g/kg/month). The determination of residual IgG was carried out by the turbidimetric automaton in the Immunology laboratory of CHU.

Results: The distribution of patients according to the type of DIP and the average age revealed respectively 44% of the cases with Antibody deficiency (average age: 9 years) and 56% of the cases with combined immune deficiency. The mean residual doses were respectively in children with CAD (5.03 (±2.26) g/l) and in patients with CID (8.575 (±6.30) g/l). We observed adverse events in 5 patients (20%) of our population.

Conclusion: The comparison of our results with the literature data, allowed us to answer the research question posed: The therapeutic dose of 0.5 g/l that patients receive every 3 to 4 weeks is sufficient to give a protective residual dose ≥ 5 g/l, and that the residual IgG level increases significantly with each increase in the infused dose.