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**Analysis of factors affecting the differences between total IgG and sum of the IgG subclasses in children with suspected immunodeficiency**Gerard Pasternak<sup>1</sup>, Katarzyna Pentos<sup>2</sup> and Aleksandra Lewandowicz-Uszyńska<sup>1</sup><sup>1</sup>Wrocław Medical University, Poland<sup>2</sup>Wrocław University of Environmental and Life Sciences, Poland

**Statement of the Problem:** Deficits in disorders of humoral immunity associated with a deficit of antibodies are the most common primary immunodeficiency. In the case of patients with primary and secondary immunodeficiencies, the total IgG and IgG subclasses measurements are used in patients diagnosis. Results of measurements show the discrepancy between the sum of IgG subclasses (IgGsum) and total IgG. The purpose of this study is to analyze the influence of gender, age and IgG abnormality on the value of this discrepancy.

**Methodology & Theoretical Orientation:** The group of patients was 648 children (aged 6 months to 18 years) referred to the Department of Clinical Immunology and Pediatrics for the purpose of diagnosis of immune disorders. For all children, measurements of the total IgG and the IgG subclasses (IgG1, IgG2, IgG3, IgG4) were conducted. The group of patients was divided into subgroups according to gender, age (under 6 years of age, in the age range between 6.5 and 12 years and in the age range between 12.5 and 18 years) and IgG abnormality (below the normal range, normal and above the normal range).

**Findings:** Statistical analysis (Kruskal–Wallis test) indicated that the all three parameters (age, gender and IgG abnormality) have a statistically significant effect on discrepancy between the IgGsum and total IgG. The higher average value of discrepancy between the IgGsum and total IgG was recognized in female group. The percentage of patients with IgG greater than IgGsum decreases as the age increases. The average value of discrepancy between the IgGsum and total IgG is highest for the group of age between 12.5 and 18 years. In the group of patients with normal IgG, the average value of discrepancy between the IgGsum and total IgG is lower than for children with IgG abnormality.

**Biography**

Doctor Gerard Pasternak graduated from the Medical University Wrocław in 2008. Since 2015 he has been the assistant 3rd Department and Clinic of Paediatrics, Immunology and Rheumatology of Developmental Age, Wrocław Medical University and the Department of Immunology and Pediatrics, Provincial Hospital J. Gromkowski, Wrocław (since 2010). He serves as a didactic assistant professor in the Department. Participates in conducting activities in the field of primary immunodeficiency for students of III-VI of the year, and takes part in the preparation and conducting of workshops for patients with PID and their families. Professional interests and research are concentrated on the diagnosis and treatment of primary and secondary immunodeficiencies, with particular emphasis on deficit of the IgG subclasses.

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