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SEVERE ASTHMA AND HYPOGAMMAGLOBULINEMIA

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Objective: Purpose:
In reviewed literature, there are no information on significance of hypogammaglobulinemia (HGG) in severe asthma patients.
Methods:
We conducted a small retrospective study in patients with severe asthma who are followed in Clinical Centre for Respiratory Diseases Jordanovac. In severe asthma patients, serum immunoglobulin (Ig) quantitative analysis was performed and due to the presence or absence of HGG patients were classified into two groups. Group 1 were severe asthma patients with normal levels of Igs and group 2 consisted of severe asthma patients with HGG. Clinical, biological and functional characteristics were compared between two groups.
Results:
In both groups 50% had severe allergic asthma and other half severe non-allergic asthma. Group 1 was formed of 83% females and group 2 had equal number of male and female patients with mean age of 55 years in both groups. Asthma patients with HGG predominantly had decreased levels of IgG (83%) with 80% of them having also decreased γ-globulin levels. 66% of both groups were former smokers with mean pack-years greater in HGG asthma patients (32 vs 23). Lung function was worse in group 2 (FVC 79.3% vs 90.3%; FEV1 51.3% vs 60%; FEV1/FVC 0.50 vs 0.54) with lower fraction of exhaled nitric oxide (54 ppb vs 72 ppb) and blood eosinophilia (163 vs 57 cells per µL). The main difference between HGG asthma patients and asthma patients with normal levels of Igs was in asthma exacerbation triggers. In group 2, 100% patients reported respiratory infections as main



exacerbation trigger while in group 1 the infections were the main trigger in only 33%. The most common isolated infections were Haemophilus influenzae, Proteus mirabilis and Staphylococcus aureus.
Conclusion:
In presented study the asthma patients with HGG had worse lung function, lower fraction of exhaled nitric oxide, blood eosinophilia and the respiratory infections were the main trigger of asthma exacerbations. However, group 2 had greater pack-years smoking history and humoral immunity function tests were not performed. More studies are needed to be conducted to determine the relationship between hypogammaglobulinemia and severe asthma as well as its effect on its course and outcome.