

## **The impact of gender differences on serum total immunoglobulin E (IgE) and histamine levels in migraine patients without aura**

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Migraine is a common disorder with higher prevalence in females. Mechanism(s) underlying migraine and its sex-related etiology remains partly unclear. Higher female prevalence can be attributed to multiple factors such as genes, biological, hormonal, socio-cultural and environmental factors. We investigated the impact of gender differences on immunoglobulin E (IgE) and histamine levels in migraine patients. Seventy-five migraine patients (58 F, 17 M, 18-58 y) without aura were studied. Serum samples were collected during attack and remission. Healthy volunteers (N=45, both genders, without headache or allergy) served as control group. Serum total IgE and histamine levels were measured by enzyme-linked immunosorbent assay and fluorimetry. Analysis of data revealed that 49.33% of patients (75.67% F, 24.32% M) had a history of allergy such as allergic rhinitis, urticaria, eczema, and asthma. Exposure to allergens such as air droplets, special food, plants, soil, perfumes, cleaning agents, and bee stings worsened the established headache or triggered new attacks in 41% of patients (73.17% F, 26.83% M). Serum histamine (ng/ml) and total IgE (IU/ml) levels in control group remained normal ( $48.16 \pm 2.70$  and  $38.31 \pm 3.20$ , no gender difference) while serum histamine and total IgE contents in migraine with allergy group were significantly ( $P < 0.001$ ) higher than control and without allergy group with a higher level in females compared to males ( $P < 0.001$ ). A probable role of an IgE-mediated mechanism and histamine release in migraine is suggested, which affects females more strongly. Patients screening and avoiding of allergic conditions are recommended as simple helpful ways for prophylaxis or treatment.