

Joint Event

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Innovative Medicine, Lithuania³Vilnius University, Lithuania**IL-33 and sST2 detection in children with atopic dermatitis**

Statement of the Problem: Atopic dermatitis (AD) is a chronic inflammatory skin disease. Twenty percent (20%) of children worldwide suffer from this disease and its prevalence is still increasing. It is considered to be a complex disease. Its clinical presentation ranges from mild to severe form, mostly presenting with dry skin, itching and eczema. AD has multiple etiological factors like genetic (*CARD11*, *FLG*), environmental (allergens, *Staphylococcus aureus*). Defects in the skin barrier function and immune dysregulation are considered to be the major pathogenic factors. Various immune cells are involved in the pathological process. Acute phase of AD presents with a predominant Th2 immune activation, overexpression of IL-4, IL-5, IL-13, hyper production of IgE and peripheral eosinophilia. A switch from Th2 to Th1 is seen in chronic AD. Recent data suggests that children with AD mostly present a Th2 immune pattern. IL-33 is a major promoter of Th2 mediated immune inflammation. sST2 is a receptor for IL-33. After binding to this receptor IL-33 loses its biological functions. sST2 is vital in diminishing Th2 immune activation.

Methodology: Fifty patients with AD (age: 1 month–6 years 5 months, median: 1 year 8 months) were enrolled in this study. Control group comprised of 14 children (age: 4 months–6 years 8 months, median: 6 years 8 months). Test and control group blood samples were tested for IL-33 and sST2 concentration using sandwich ELISA.

Findings: Serum IL-33 was significantly higher in children with AD, compared to healthy controls: (AD) 18, 21 pg/ml vs. (C) 0, p=0, 0392. Serum sST2 levels were similar between the groups, the difference was not significant: (AD) 69, 46 pg/ml vs. (C) 78.58 pg/ml, p=0, 6539.

Conclusion & Significance: Elevated serum IL-33 concentration is associated with atopic dermatitis in pediatric patients. Serum sST2 is not a suitable biomarker for atopic dermatitis in children.

Biography

Ilona Paulauskaite takes interest in immunological mechanisms leading to the development of atopic dermatitis in children. Having experience in working at a laboratory in Vilnius University Children's Hospital, she is interested in molecules, which could be used as possible biomarkers.

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