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Serum periostin levels and exercise-induced bronchoconstriction in asthmatic children**Heysung Baek**

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Exercise-induced bronchoconstriction (EIB) describes acute airway narrowing that occurs as a result of exercise. The diagnosis of EIB is established by changes in lung function provoked by exercise, not on the basis of symptoms. Although the pathogenesis of EIB are not fully understood, it is clear that inflammatory mediators, including histamine, tryptase and leukotrienes, are released into the airways from cellular sources in the airways, including eosinophils and mast cells (MCs). Periostin in the serum is one of the promising biomarkers of TH2-induced airway inflammation, eosinophilic airway inflammation and the response to TH2-targeted therapy. Recently, it was suggested that periostin can be produced by MCS and can act on epithelial cells via integrin-binding activation, resulting in TSLP secretion. Mast cell activation is a feature of EIB. We hypothesized that serum periostin levels might correlate with EIB in asthmatic children. The study included 86 children aged 6–15 years in an asthmatic group (n=56) and healthy controls (n=30). We measured the periostin levels in serum and performed exercise bronchial provocation test (BPT) and mannitol BPT. Periostin levels were significantly correlated with both the maximum decreases in %FEV1 and mannitol PD15 values. For discriminating the asthmatic patients with EIB and asthmatic patients without EIB, the receiver operating characteristic (ROC) curve for using periostin levels had an area under curve (AUC) of 0.722. For discriminating the asthmatic patients with EIB and asthmatic patients without EIB, the ROC curve for using FENO levels, eosinophil count and total IgE had an AUC of 0.625, 0.519 and 0.530, respectively. Serum periostin levels in the asthmatic children with EIB were significantly greater than those in both the asthmatic children without EIB and the controls and were associated with EIB.

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