

Mas-Related G Protein-Coupled Receptor-X2 serum level in allergic and non-allergic individuals

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Introduction

Allergic activation of mast cells proceeds via IgE-dependent pathway, but the relevant “second route”, representing IgE-independent activation pathway, was proposed to proceed via Mas-related G protein-coupled receptor-X2 (MRGPRX2). Some evidencesupporting this concept was recently reported in animal models of drug-induced hypersensitivity and in allergic bronchial asthma in humans.

Aim

To validate if MRGPRX2 serum level may serveas biomarker of the allergic conditions with expected mast cells involvement and how it compares to healthy controls.

Material and methods

Blood samples were collected from 7 controls without allergic complaints, 3 patients undergoing venom immunotherapy, all with the significant increase in serum tryptase levels (mean: 18.57 ng/ml), 3 patients strongly allergic to common environmental allergens (specific IgE ≥ class 3 to at least 7 allergens): two asthmatics and an individual suffering from severe chronic urticaria. MRGPRX2 serum levels were measured with commercially available ELISA kit following the manufacturer’s protocol (detection range from 3.12 ng/ml).

Results

Unexpectedly, we noted neither any significant increases in MRGPRX2 serum levels in patients, nor significant differences between particular subgroups, andbetween patients and controls. After dilution of samples,the observed MRGPRX2 levels remained in the range 0–2.47 ng/ml.

Conclusions

Serum level of MRGPRX2 is not increased in the common allergic conditions with mast cells involvement. Further investigations of methodological issues concerning outcomes of previous preliminary observations and current experiments may elucidate inconsistency between them