1222 Diagnostic utility of nasal provocation tests in children with possible allergic rhinitis and allergic asthma

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Background: Inhalation provocative tests (IPT) represent a precise and sensitive diagnostic tool in patients with allergic diseases. Nasal provocative tests (NPT) may be a useful alternative approach in vulnerable patient groups like children. Additional criteria of assessment in NPT can increase the diagnostic value of the test. The level of eosinophilia in nasal secretions may prove to be a useful marker of the intensity of allergic inflammation.

Methods: NPT were performed in 22 patients 5–16 years old with persistent allergic asthma and allergic rhinitis. All patients had documented sensitivity to house dust mites. NPT were performed during periods of asthma remission (FEV1 > 75% of normal value) with all inhaled and systemic treatment withheld prior to the NPT. Nasal secretion eosinophilia was assessed before NPT and monitored for 48 h following NPT.

Results: NPT induced substantial changes within 20 min with both early and late responses noted. The relative number of eosinophils in nasal secretions decreased from 4.65–3.45% within 20 min after NPT, reaching a nadir (0.65%, P < 0.001) at 5 h post-NPT and persisting at diminished levels for at least 24 h (2.4%). There was a correlation between the baseline levels of nasal secretion eosinophilia and the clinical severity of the disease.

Conclusions: NPT may be a valuable alternative to IPT in asthma children due to potential adverse consequences of IPT, especially in children having allergic asthma. Transient eosinopenia in nasal secretions may be a supplementary marker of positive responses during NPT.

1223 Correlation between skin prick tests and specific IgE in allergic Estonian adults

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Background: Skin prick tests (SPT) and serum specific IgE antibody measurement are commonly used in evaluation of allergy. The earlier Estonian data give an assumption that in children, the transient sensitisation in early childhood is followed by a down-regulation of skin reactivity while the prevalence of circulating IgE antibodies remain high. Can SPT and specific IgE be considered as complementary, or should SPT-positivity be confirmed by specific IgE tests in adults? The current study assesses the correlation between results of SPT and specific IgE tests in SPT-positive adults.

Method: Adult population-based cross-sectional study (FinEsS) in three areas of Estonia with 1346 randomly selected participants in whom SPT to 15 Aeroallergens were performed. Serum specific IgE were measured in 242 SPT-positive subjects defined as at least one positive reaction with a weal of equal or more than 3 mm. Positive response was defined as specific IgE equal or more than 0.35 kU/L; UniCAP. Tetrachoric correlation coefficient for binary characteristics (Tetra) and Spearman’s rank order correlation test (Spearman) were used for assessment of correlation.

Results: Over 50% of SPT-positive patients had specific IgE to one or more Aeroallergens. Specific IgE was more than 0.35 kU/L in 73.2% of patients. The correlation of SPT and specific IgE to cat, Dermatophagoides pteronyssinus, Blomia tropicalis, Dermatophagoides farinae, Alternaria, grass, and D. pteronyssinus was highest (Pearson’s: 0.543, Tetra: 0.778, Spearman’s: 0.552), to house dust mite, D. pteronyssinus, Alternaria and animal hair to house dust mite, D. pteronyssinus (Tetra) and Spearman’s rank order correlation test. SPT to cat correlated strongly (Tetra: 0.826 and Spearman’s: 0.552), to house dust mite, D. pteronyssinus, Alternaria, grass and D. pteronyssinus at medium level (Tetra: 0.671 and Spearman’s 0.496), while corresponding coefficients for storage mites, A. siro and L. destructor were 0.580 and 0.379, and 0.644 and 0.424, respectively.

Conclusion: On adults, it is highly likely to diagnose existing allergic sensitisation to cat using one of the two tests. Suspected allergic sensitisation to cockroach and mites species ought to be confirmed with both SPT and spec-IgE tests.

1224 Suspected heparin hypersensitivity reaction: case report

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Background: Heparin and other anticoagulants are some of the most important and widely used drugs in hospitalized patients. However, in clinical practice, the incidence of hypersensitivity reactions to these drugs is low. Heparin is the first line therapy in some diseases, which makes an adequate diagnosis essential.

Patients and methods: We present the case of a 31-year-old female, with a history of surgically corrected pulmonary arteriovenous shunt in 1990 and heterozygous protein S deficiency which led to two thrombotic events (Deep Vein Thrombosis in 1994 and 2003). The patient was medicated with warfarine since the last episode. In 2004 the patient exhibited an immediate reaction, with erythema and pruritus at the injection site of heparin. She was sent to our Department with suspected heparin allergy. Skin prick tests (SPT) to latex and heparin were done in the first step, followed by patch, intradermal test (IDT = 1/10000, 1/1000, 1/100) and subcutaneous provocation tests to heparin. Total serum IgE and specific IgE to latex determinations were carried out.

Results: SPT patch and intradermal tests to heparin were negative. SPT to latex was positive. Five minutes after the subcutaneous administration of heparin (0.1 mL), the patient suffered an intense erythematous pruritic reaction not at the injection site, but at the site of the latex SPT performed the previous day in the homolateral arm. The heparin vial had a rubber seal. The next day, in a latex-free environment, no reaction was observed after the subcutaneous injection of heparin. Specific IgE to latex was 6.4 kU/L. Total serum IgE was below 19 kU/L. The diagnosis of latex allergy was made and the patient restarted subcutaneous heparin therapy, with no complications.

Conclusion: The use of a natural rubber latex sealed heparin vial appears to be the cause of the symptoms, in a patient without any other signs of latex allergy. This case emphasizes the importance of considering latex allergy in the differential diagnosis of parenteral drug hypersensitivity.

1225 T-cell marker CRTH2: a tool for basophilic identification?

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Background: CRTH2 (chemoattractant receptor-homologous molecule expressed on Th2 cells) was shown to be expressed in a subset of T cells and in basophils (BA) and eosinophils. This molecule has been proposed as a marker to identify BA in the basophil activation test (BAT).

Aim: In order to assess its utility we conducted a BAT study to compare CRTH2 with two other BA markers: CD203c or IgE expression. Two cohorts of patients with allergy to insect venom (n = 7) and to drugs (n = 7) based on clinical history, skin tests and specific IgE were evaluated. CD63 and up-regulation of CD203c were used as readouts of the BA activation.