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Diagnostic utility of nasal provocation tests in children with possible allergic rhinitis and allergic asthmaV Tsybulkina¹, G Zainetdinova¹, N Tsybulkin², L DuBuske³¹Allergy and Immunology, Kazan State Medical University, Kazan, Russian Federation, ²Allergy and Immunology, Kazan State Medical Academy, Kazan, Russian Federation, ³Allergy and Immunology, IRINE, Gardner, MA, United States

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 with-held 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 asthmatic 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.

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Correlation between skin prick tests and specific IgE in allergic Estonian adultsA Raukas-Kivioja¹, K Julge², H Loit¹, A Minossenko¹, E Rönmark³, B Lundbäck³¹Department of Chronic Disease Prevention, National Institute for Health Development, Tallinn, Estonia, ²Children's Clinic, Tartu University, Tartu, Estonia, ³Lung and Allergy Research, Karolinska Institutet, IEM, Stockholm, Sweden

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 3 mm. Positive response was defined as specific IgE equal or more 0.35 kU/L; UniCAP. Tetrachoric correlation coefficient for binary characteristics (Tetra) and Spearman's rank order correlation test (Spearman's) were used for assessment of correlation.

Result: SPT and specific IgE to assess allergic sensitisation to cat were highly correlated (Tetra: 0.826 and Spearman's: 0.602). SPT and IgE to cockroach correlated at high or medium level (Tetra: 0.817 and Spearman's: 0.552), to house dust mite, *D. pteronyssinus*, at a 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.

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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 parenteric drug hypersensitivity.

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T-cell marker CRTH2: a tool for basophilic identification?S Campina Costa¹, A Campos Melo², J Caiado³, A Spínola³, M Pereira Barbosa³, M Trindade¹, A Sousa², R Victorino², M Pereira Santos²¹Departamento de Pneumologia, Hospital Pulido Valente/Unidade de Imunoalergologia, Lisboa, Portugal, ²Instituto de Medicina Molecular/Faculdade de Medicina da Universidade de Lisboa, Unidade de Imunologia Clínica, Lisboa, Portugal, ³Serviço de Imunoalergologia, Hospital Santa Maria, Lisboa, Portugal

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.