

capillary microarray data as visualized in Fig. 1.

To our knowledge, this is the first investigation focusing on capillary serum sampling for microarray-based IgE analysis. Our data suggest that the detection of specific IgE antibodies against multiple recombinant allergen components is feasible and reliable utilizing only minute volumes of patient serum. Allowing for capillary blood sampling, a mode of blood withdrawal particularly suitable for the pediatric age group, it could help avoid peripheral venipuncture which is known to cause procedural distress and not rarely requires local anesthesia in infants and children (5).

Therefore, our results strengthen the view of allergen microarrays as promising tools for future low-invasive IgE testing. However, as has been pointed out before (6), further clinical trials with larger numbers of patients are required in order to assess all relevant microarray performance parameters in comparison to established methods of *in vitro* IgE detection.

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A commercial histamine release test and autologous serum skin test in the diagnosis of autoimmune urticaria

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Key words: autoimmune urticaria; autologous serum skin test; histamine release test.

Autoimmune chronic urticaria, in which functional autoantibodies against the high-affinity IgE receptor Fc epsilon R1 arise, is routinely diagnosed using the autologous serum skin test (ASST) (1, 4). However, the continuous need

of medication by these patients often restricts the use of the ASST. Antihistamines, immunosuppressants and antidepressants may suppress positive results. In addition, ASST is not always assessable because of dermatographism. The gold standard laboratory test for autoimmune chronic urticaria is the demonstration and measurement of histamine release from target basophils

of dermal mast cells (2). A commercial histamine release test (HR-Test; RefLab, Copenhagen, Denmark) has become available.

We studied 10 patients with chronic urticaria and no underlying infections with both the ASST and the HR-Test. The age, sex, type of urticaria, underlying diseases and the medication used by the patients are shown in Table 1. Antihistamines were withdrawn 5 days prior to skin tests except for patient number 8, who could not stop levosetirizine medication because of intensive itching. Serum aliquots from the patients were frozen and sent to RefLab. Fifty per cent, 25% and 12.5% serum dilutions were incubated with dextran-sedimented basophils from healthy donors and histamine release of over 12% was considered positive. The donor basophils were selected on the basis of a histamine release response to anti-IgE and a panel of positive donors releasing over 30% of the cellular histamine content. Histamine was measured fluorometrically by a glassfibre method (3). For the ASST, 0.05 ml of autologous serum was injected intracutaneously into the forearm of each patient (4). The diameter of the wheal was measured after 2 h. The saline controls did not show any wheal reactions.

The sera of four patients showed a positive HR-Test result while only two patients showed a positive ASST (Table 1). All the positive HR-Test reactions were detected at the 12.5% serum dilution. The medication used by the patients explains the main differences between the two tests, as donor basophils used in the HR-Test are not inhibited. To our knowledge, comparisons between the ASST and the commercial HR-Test of Reflab have not been published. However, histamine release has been measured for scientific purposes in earlier studies (4, 5). Over 50% of the patients with positive results in the histamine release test were also positive in the ASST.

The HR-Test is thus warranted in the diagnosis of autoimmune urticaria with continuous medication such as antihistamines or corticosteroids and with dermatographism.

Table 1. Results of autologous serum skin tests and histamine release tests in patients with chronic urticaria

Patient number	Age/years	Sex	Type of urticaria	Duration/ months	Other diseases	Food prick	Regular medication	Autologous serum test	HR-Test
1	21	F	Dermographism	18	Addison, asthma, gluten-sensitive enteropathy	+	Prednisolone 20 mg, fludro-cortisone	–	25%
2	56	F	Dermographism	24	Asthma	–	–	–	–
3	75	M	Continuous	3	Vitiligo	–	–	8 mm	50%
4	27	M	Continuous	10	Diarrhoea, rhinitis	+	–	–	–
5	43	F	Continuous	5	Rhinitis	–	–	10 mm	21%
6	25	M	Continuous	36	Kallman syndrome	–	FSH, hCG	–*	–
7	34	M	Continuous	2	–	–	–	–	–
8	45	F	Continuous	7	Anaphylactic reactions	–	Levosetirizine 5 mg	–	27%
9	20	F	Dermographism	7	Rhinitis	+	–	–	–
10	43	M	Recurrent	120	Angio-oedema	–	–	–	–

HR, histamine release; F, female; M, male; *, a late reaction of 10 mm was seen after 6 h; FSH, follicle stimulating hormone; hCG, human chorion gonadotropin.

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Mysterious disappearance of an allogenic anterior cruciate ligament graft – a case of allergy against altered collagen

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Key words: allograft; allogenic bone-patellar tendon-bone graft; collagen type I; gelatine.

A 47-year-old man presented with history of an aseptic lysis after implantation of an allogenic anterior cruciate ligament graft. As a consequence of the rupture of his left anterior cruciate ligament he received an allogenic bone-patellar tendon-bone graft (Tutoplast; Tutogen Medical GmbH, Neunkirchen am Brand, Germany). After 6 days of normal wound healing, he noticed a painful swelling and redness of the treated knee. After 2 weeks the knee was revised surgically, assuming that the knee suffered from a bacterial infection. Macroscopically, a near-complete lysis of the allogenic-grafted anterior cruciate ligament was obvious. Microscopically, necrotic tissue with infiltrating granulocytes was seen. Microbiological investigations were

First allergic reaction to an allogenic cruciate ligament graft in a patient with gelatine allergy.

completely negative. Assuming that the graft destruction could have been caused by an allergic reaction, allergy tests were performed. In the skin prick-to-prick test the patient showed positive reactions after 20 min to the genetically identical allogenic anterior cruciate ligament graft, a genetically nonidentically allogenic anterior cruciate ligament graft, cat epithelia, grass pollen, jelly babies from Haribo® (Haribo GmbH & Co. KG, Bonn, Germany) and Storck® (Storck GmbH & Co. KG, Berlin, Germany) and pharmaceutical pork gelatine. The patient reported an aversion against jelly babies since childhood. Patch testings were negative. Two healthy control persons were also tested for the ligament grafts, but showed no reactions in the tests. Bovine and pork gelatine immunoglobulin E (IgE) antibodies in the patients' blood were tested by immunoassays (ImmunoCAP; Pharmacia Diagnostics, Uppsala, Sweden), which showed no specific anti-IgE antibodies against the tested substances.

Human donor ligament allografts are used to re-establish the stability of the knee joint after rupture of the anterior cruciate ligament. Compared with autologous transplant materials, allografts have the advantage of a shorter operation and anaesthetic time, whereas a higher re-rupture rate, delayed incorporation, possible disease transmission and immunological reaction to the allograft by the recipient are among the potential disadvantages of allografts (1). However, so