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## LETTER TO THE EDITOR

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

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Sir,

Chronic idiopathic urticaria (CIU) is a rather common skin disorder characterized by the recurrent eruption of short-lived wheals accompanied by redness and itching for at least six weeks. <sup>[1]</sup> About 30-50% of patients with CIU have circulating histamine-releasing auto antibodies to the high-affinity IgE receptor Fc RI on basophils and mast cells or, less commonly, antibodies to IgE. <sup>[2]</sup> The term autoimmune urticaria is increasingly being accepted for this subgroup of patients. The autologous serum skin test (ASST) is currently the best *in vivo* clinical test for detection of *in vitro* basophil histamine-releasing activity. <sup>[3]</sup> The gold standard laboratory test for autoimmune chronic urticaria is the demonstration and measurement of histamine release from target basophils of dermal mast cells. <sup>[4]</sup> A commercial histamine release test (HR-Test; RefLab, Copenhagen, Denmark) has become available.

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We studied 20 patients (Nine males and 11 females, Age group 10 to 65 years, Mean age 33.2 years) with chronic urticaria and positive ASST and no underlying infections with the HR-Test. We found ASST test positive in 20 patients out of 45 patients tested with ASST. Patients were advised to stop antihistamines and steroids for two days, and doxepin for three weeks before the test. The ASST was performed by injecting 0.05 ml of the patient's own serum intradermally into the left flexor forearm 2 inches below the antecubital crease and a saline control 2 inches away. A reading of the wheal was taken after 30 min. A wheal and flare more than 1.5 mm in diameter than that of the control was considered positive.

The age, sex, type of urticaria, underlying diseases and the medication used by the patients are shown in [Table 1]. Duration of urticaria ranged from six to 60 months. Average duration was 23.55 months.

Antihistamines were withdrawn two days prior to skin tests. 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 16.5% 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 is determined by the fluorometric o-Phthal-di-aldehyde method. The assay is calibrated by a two-point standard curve and a positive cell control (anti-IgE). Test results are classified in Classes 0, 1, 2 and 3 (standardized allergens) or reported as negative or positive. In the laboratory serum and donor basophils are incubated and the % histamine release is detected. A histamine release of more than 16.5% is a positive test result.

The sera of nine patients (six females and three males) out of 20 (45%) showed a positive HR-Test result. To our knowledge, comparisons between the ASST and the commercial HR-Test of Reflab have not been published from India. A similar study published from Finland shows that four out of 10 patients had positive HR-Test. [5]

These results indicate that ASST is not a specific test and HR-Test should be done to diagnose autoimmune urticaria. ASST still remains a baseline test to detect the autoimmune nature of urticaria. Larger studies are required to validate these findings.

## Acknowledgement

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| Age | Sex | Duration months | Other findings | Medication   | ASST | HR- TEST | Remarks percentage histamine release (%) |
|-----|-----|-----------------|----------------|--------------|------|----------|------------------------------------------|
| 25  | M   | 36              | Dermographism  |              | +    | +        | 78                                       |
| 21  | M   | 42              |                |              | +    | +        | 68                                       |
| 35  | F   | 36              | Asthma         | Theophylline | +    | +        | 77                                       |
| 39  | F   | 45              | Angioedema     |              | +    | +        | 73                                       |
| 41  | F   | 10              |                |              | +    | +        | 72                                       |
| 33  | M   | 12              |                | Montelukast  | +    | Neg      |                                          |
| 40  | F   | 24              |                |              | +    | Neg      |                                          |
| 27  | F   | 6               |                |              | +    | Neg      |                                          |
| 30  | M   | 7               | Dermographism  |              | +    | Neg      |                                          |
| 30  | M   | 6               |                |              | +    | Neg      |                                          |
| 40  | F   | 12              |                |              | +    | +        | 49                                       |
| 35  | F   | 12              |                |              | +    | +        | 41                                       |
| 63  | F   | 24              | Rhinitis       |              | +    | Neg      |                                          |
| 55  | F   | 36              | Hypothyroidism | Thyroxine    | +    | Neg      |                                          |
| 12  | M   | 7               |                |              | +    | +        | 35                                       |
| 25  | M   | 60              | Dermographism  |              | +    | Neg      |                                          |
| 18  | M   | 24              |                |              | +    | Neg      |                                          |
| 25  | M   | 60              | Angioedema     |              | +    | Neg      |                                          |
| 35  | F   | 6               |                |              | +    | Neg      |                                          |
| 35  | F   | 6               |                |              | +    | +        | 35                                       |

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