Autologous serum skin test v/s autologous plasma skin test

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 6 weeks.[1] In 25% to 60% of patients of chronic urticaria, the results of autologous serum skin test are positive.[1-4] About 30% to 50% of patients with chronic idiopathic urticaria have circulating histamine-releasing autoantibodies to the high-affinity IgE receptor Fc RI on basophils and mast cells or, less commonly, antibodies to IgE.[4] 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.[5] One study reports that APST is positive in more patients with chronic urticaria than ASST.[6]

The aim of the current study was to perform APST, i.e., investigate skin autoreactivity by using plasma anticoagulated with substances other than heparin, and compare it with ASST in patients with CIU.

Thirty consecutive consenting adult patients (male:female::13:17; age range, 18-60 years; mean age, 38.9 years; range of duration of urticaria, 2 months to 3 years) with CIU, seen at a private skin clinic in Navi Mumbai, India, were studied. CIU was diagnosed on the basis of the appearance of continuous or recurrent hives with or without angioedema for more than 6 weeks.[1] Patients with physical urticaria were excluded. Pregnant and lactating mothers were excluded.

After antihistamine treatment (cetirizine 10 mg or fexofenadine180 mg or hydroxyzine 25 mg daily in all cases) had been stopped for at least 3 days, all patients underwent intradermal testing with 0.05 ml of both sterile autologous serum (ASST) and plasma (APST), and saline as negative control. All patients underwent intradermal test with sodium citrate–anticoagulated plasma (0.125 mol/L of sodium citrate). Serum and plasma samples were centrifuged after 5 minutes at 2500 rpm for 5 minutes and immediately used for intradermal tests. For all intradermal tests (serum, plasma, and negative control), readings were taken at 30 minutes; only an unequivocal wheal-and-flare reaction with a wheal diameter of at least 1.5 mm greater than control was taken as a positive test result.

No patient reacted to the intradermal injection of saline. Altogether, 14 (46%) of 30 patients scored positive on ASST. Test with plasma also showed the same, 14 of 30, positive results. In 1 patient with severe urticaria, plasma-induced wheal was greater than serum-induced wheal by 3 mm. The wheal-and-flare area induced by autologous serum and plasma was equivalent in other 13 cases. Positive group had 4 males and 10 females. Duration of urticaria was more than 3 months in all positive cases.

A study from Italy showed 61 (86%) of 71 patients scored positive on APST-Na citrate. The skin test with APST-Na citrate was positive in 21 (70%) of 30 patients who scored negative on ASST and in 40 (98%) of 41 ASST-positive patients. In ASST-positive patients, the mean diameter of the wheal-and-flare area induced by autologous plasma exceeded that of the wheal-and-flare area induced by autologous serum in 21 of 41 cases; in 19 cases, the wheal-and-flare area induced by autologous serum and plasma was equivalent, whereas in 1 ASST positive case, the APST was negative. The same study also found potassium citrate plasma induced nonspecific reactions and was no longer used to detect patients' autoreactivity.

Asero showed that in patients with chronic idiopathic urticaria (CIU), plasma showed signs of thrombin generation and autologous plasma skin tests score positive in as many as 95% of cases. The extrinsic pathway of clotting cascade is activated in CIU. Disease severity is associated with the activation of the coagulation cascade.[7] Others have confirmed the findings of the earlier studies, suggesting that systemic fibrinolysis may not be involved in chronic urticaria.[8]

However, larger studies are required to confirm these findings and to decide whether plasma or serum should be used for the intradermal test.

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