

Treatment of Parthenium dermatitis with methotrexate

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Patients with parthenium dermatitis are often unresponsive to topical steroids, and immunosuppressive agents may be necessary to reduce their need for systemic corticosteroids. We evaluated the efficacy of methotrexate in parthenium dermatitis. Sixteen patients unresponsive to topical treatment were included after baseline investigations, and treated with oral methotrexate (15 mg/week). Clinical response was monitored using a dermatitis area and severity index (DASI). Seven patients completed ≥ 6 months' follow-up,

Table 1. The dermatitis area and severity index (DASI)

Score	0	1	2	3	4	5	6
Percentage of area of body part involved	0	<10	10 to <30	30 to <50	50 to <70	70 to <90	90 to 100
Clinical signs (each scored)	None	Slight	Moderate	Severe			
1. Erythema, oedema							
2. Vesicopustules, crusts							
3. Cracks, excoriations							
4. Scaling, dryness							
5. Lichenification							

Score for each body area viz., head and neck (H), trunk (T), upper limbs (UL), and lower limbs (LL) are calculated as follows

Score for percentage of area involved $\times$ total of scores for each of 5 clinical signs (above)

$\times 0.1 = H$
 $\times 0.3 = T$
 $\times 0.2 = UL$
 $\times 0.4 = LL$

DASI = H + T + UL + LL

and their mean DASI fell to 5, 2.7 and 2.1 at the end of 1, 3 and 6 months respectively, from a baseline score of 10. Only 3/7 patients required oral prednisolone in the initial 2–4 weeks. Side effects were minor, being mainly folliculitis and furuncles. Methotrexate may hence be a useful alternative for patients with severe parthenium dermatitis.

Key words: Airborne contact dermatitis; chronic actinic dermatitis; plant dermatitis; parthenium dermatitis; methotrexate.

Parthenium dermatitis, caused by the widespread weed *Parthenium hysterophorus*, is common in northern India, with nearly 80% of patients with suspected airborne contact dermatitis being patch test positive for Parthenium (1). This distressing, recurrent, or persistent condition may present in airborne or/and chronic actinic dermatitis patterns (2). Topical corticosteroids provide only transient relief, and the side-effects of oral corticosteroids make effective alternatives necessary. We did a study to assess the usefulness of methotrexate in Parthenium dermatitis because it has been found efficacious in other dermatitic disorders, including atopic dermatitis (3–4).

Treatment and Results

16 consecutive patients (13 men and 3 women) with airborne contact dermatitis or chronic actinic dermatitis with positive patch test and/or photopatch test to Parthenium and unresponsive to potent topical corticosteroids and sunscreens were included. Their mean age was 53.6 ± 11 years (range, 30–69 years) and mean disease duration was 5 ± 2.8 years (1–8 years). Dermatitis intensity was recorded as a dermatitis area and severity index (DASI)

(Table 1). Pretreatment investigations included a haemogram, liver and renal function tests, urine examination, and chest X-ray.

Patients received oral methotrexate (15 mg/week) with folic acid (5 mg/day). Topical corticosteroids and sunscreens were continued. The DASI was recorded at 0, 1, and 3 months, and then 3 monthly.

7 patients were followed up for ≥ 6 months, and their response was analysed. Their mean DASI score was found to decrease from 10 ± 8.7 (1.4–30.4) before treatment to 5 ± 3.7 (0.2–11.4) at 1 month. 3 of these 7 patients also received prednisolone (≤ 30 mg/day) for the initial 2–4 weeks. However, improvement continued at 3 and 6 months, with scores of 2.7 ± 1.2 (0.9–4.7) and 2.1 ± 1.4 (0–3.9), respectively. All the patients except 1 patient showed a distinct early response, with DASI decreasing by the end of 1 month; this latter patient also responded by 3 months.

The haemogram and liver function tests were repeated at 2, 4 and 8 weeks, and then 2 monthly. No significant decrease in blood cell counts or hepatotoxicity occurred, and no patient required discontinuation of the treatment due to side-effects. Folliculitis, furuncles, or dermatophytosis occurred in 4 of 7 patients, all of whom responded to appropriate therapy.

Discussion

Azathioprine is regarded as the first choice for a steroid-sparing systemic immunosuppressive agent in severe Parthenium dermatitis, with clearance rates of 67%–88% reported (5, 6). To the best of our knowledge, this is the first report of methotrexate in Parthenium dermatitis. All the 7 of our patients who followed up

improved, though it was early or peak summer, when clinical worsening commonly occurs. We believe that this improvement was largely due to methotrexate because only 3 of them received short courses of prednisolone. We therefore suggest that methotrexate may be a useful option in severe Parthenium dermatitis unresponsive to conventional treatment.

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