

## LETTER TO THE EDITOR

## Failure of omalizumab in the treatment of solar urticaria

### Editor

Solar urticaria is a rare IgE-mediated disease resulting in urticariae following exposure to UV- or visible light. Wheals develop within minutes of light exposure and resolve spontaneously over hours. Wheals may develop following sun exposure through glass or under clothing. H1-antihistamines and phototherapy are the mainstay of treatment. Beneficial effects have been reported with plasmapheresis, intravenous immunoglobulins, chloroquine, cyclosporine and polypodium leucotomos. Recently, omalizumab, a recombinant humanized monoclonal antibody against the human IgE Cε3 domain has been reported as a promising therapeutic option for refractory solar urticaria.<sup>1</sup>

Here, we report a patient with serum factor positive UVA-induced solar urticaria unresponsive to omalizumab. A 64-year-old Caucasian woman presented with a 28-year history of severe solar urticaria. Wheals developed within 3 min of exposure to sunlight, including through window glass. Sunlight exposure repeatedly provoked systemic symptoms with nausea and cardiovascular reactions. The relevant induction spectrum was found to lie between 340 and 400 nm (UVA1). The minimal dose was positive at 10 J/cm<sup>2</sup> and a profound urticarial response was elicited in all test fields. Intradermal skin test with UVA-irradiated autologous serum was positive implicating the presence of a serum factor. FBC, ANA, liver and renal profiles were normal. Serum IgE was 12.6 kU/L. Treatment with sunscreens, antihistamines, including high-dose desloratadine 20 mg/die in combination with ranitidine 300 mg/die was ineffective. Light hardening with narrow band UVB over 6 months resulted in marginal, short-lived reduction in symptoms. Two grams of Mycophenolate mofetil daily showed no effect and nine cycles of plasmapheresis resulted in only very transient improvement in the severity of symptoms.

Omalizumab was commenced at a dose of 150 mg every 4 weeks. Following three treatment cycles, she reported no improvement, in contrast she felt symptoms had worsened. On repeat phototesting she developed urticariae in all test fields, which spread to involve adjacent non-exposed skin within 2–3 min. Within 5 min, she developed generalized urticaria with associated dizziness and nausea. Vital signs remained stable and i.v. treatment with dimetindenmaleat (4 mg) resulted in resolution of her symptoms. Omalizumab was discontinued and treatment other than desloratadine and sunscreens was refused.

In solar urticaria, a chromophore in the serum or skin of affected individuals is suggested to be altered as a result of exposure to an individual light spectrum and to act as mast cell activator in an IgE-dependent fashion.<sup>2,3</sup> We report a case of UVA-induced solar urticaria unresponsive to omalizumab confirmed by a systemic response to phototesting with UVA light following three treatment cycles with omalizumab. Three cases of complete response of solar urticaria with omalizumab and one case with partial improvement have been reported.<sup>1,4,5</sup> More recently, a case similar to ours was reported where solar urticaria failed to respond to omalizumab.<sup>6</sup> As in our case, intradermal testing with UV-irradiated autologous serum confirmed the presence of a serum factor. Serum factor-positive solar urticaria patients generally have a poorer prognosis than those where no serum factor is identified. It is possible that these patients are more resistant to treatment with omalizumab. Dose finding studies regarding the treatment of chronic spontaneous urticaria with omalizumab have shown a dosage of 300 mg 4-weekly to be most effective.<sup>7,8</sup> Thus, our patient may have responded better to higher dose omalizumab, however, on account of her subjective deterioration and systemic response to UVA phototesting she refused any further treatment with omalizumab.

In conclusion, omalizumab may not always be effective in solar urticaria. Detailed characterization of patients with solar urticaria and central data collection may be required to establish biomarkers that allow us to predict treatment response to omalizumab in this exceedingly rare condition.

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