CLINICAL VIGNETTE

Successful Management of Chronic Urticaria with Change in Omalizumab Formulation

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A 33-year-old female with anxiety and depression presented to Allergy with urticaria. She reported the onset of a rash three months prior, shortly after receiving her second Pfizer COVID vaccine. The rash was described as intensely itchy, affecting her face, body, and extremities. Individual areas of the rash resolved within 24 hours, and she also noted lip angioedema. Notable triggers included pressure and scratching, which resulted in dermatographism. The rash was initially well-controlled with daily loratadine, however, her condition had recently worsened. She was seen in dermatology and was diagnosed with urticaria, and prescribed a methylprednisolone steroid taper. At the time of presentation to allergy, she had already completed two courses of methylprednisolone and increased her loratadine dose to 30-40 mg/day, which was more than three times the standard dosing. Although the steroids provided temporary relief, the urticaria recurred after treatment was completed. Despite the higher dose of loratadine, she experienced hives daily that significantly affected her sleep quality.

The patient's medication included alprazolam 0.5 mg as needed for anxiety, gabapentin 300 mg as needed for insomnia, levonorgestrel-ethinyl estradiol 0.1-20 mg-mcg for contraception, desvenlafaxine 25 mg for depression, and loratidine 30-40 mg for urticaria symptoms.

Laboratory investigations, including eosinophil count and thyroid-stimulating hormone (TSH) levels, were within normal limits. Potential infections that could contribute to the hives were evaluated with negative results for strongyloides, H. pylori, and stool parasites.

Based on the negative test results, the patient was diagnosed with chronic idiopathic urticaria with angioedema. Her urticaria remained refractory despite maximal antihistamine therapy, including fexofenadine 180 mg three times daily, famotidine 20 mg twice daily, montelukast 10 mg once daily at bedtime, and hydroxyzine 25 mg as needed at bedtime. Approximately two weeks after her initial presentation, the patient was initiated on omalizumab. Given the severity of her hives, an initial dosing schedule of 300 mg every two weeks was chosen, with plans to space out the injections to every four weeks once the hives were controlled.

The patient reported an immediate response and improvement in her symptoms after the first dose of omalizumab. Although she still experienced hives, the lesions were smaller in size and less widespread. As she continued with the every other week omalizumab injections, her hives gradually improved, with more days with clear skin and fewer days with hives. With the improvement in her hives, she began to note flaring of her hives shortly after each injection, lasting 3-5 days. Several possibilities were considered including possible reaction to the active ingredient or excipient in omalizumab.[1] The likelihood that the hives resulted from a dose delay was considered low, since there was no flare when the patient was late for one injection (18 days instead of 14).

Because the adverse reaction was observed with prefilled syringes of omalizumab, she switched to the vial formulation. Following the switch, the patient reported no flaring of hives, and no other adverse effects were reported. With this improvement, her omalizumab injections were spaced out to every four weeks. Over the next few months, her antihistamine medications were gradually reduced, and ultimately she was able to discontinue omalizumab after six months without a recurrence of her hives.

Discussion

Chronic urticaria poses a significant management challenge, particularly when standard treatments such as high-dose antihistamines prove inadequate. Biologic therapies targeting IgE, such as omalizumab, are the next treatment step when high-dose antihistamines are ineffective. However, as with any medication, variations in formulations can potentially influence treatment outcomes and patient response.

In this case, the patient experienced a worsening of hives shortly after each injection with the prefilled syringe version of omalizumab. This adverse reaction suggests a potential sensitivity or intolerance to one or more excipients or formulation characteristics unique to the prefilled syringe.[2] Possible culprits could include preservatives, stabilizers, or buffers, which have been associated with hypersensitivity reactions in certain individuals.

The switch to the vial version of omalizumab proved to be crucial, as it led to sustained resolution of symptoms without any reported adverse effects. It is possible that the vial formulation of omalizumab contains different excipients or formulation characteristics that were better tolerated by the patient, resulting in improved treatment outcome.

Conclusion

With this patient, the switch from the prefilled syringe to the vial version of omalizumab resulted in a significant resolution of hives in a patient with chronic urticaria who had previously experienced a flare of symptoms with the prefilled syringe. This finding highlights the importance of considering different formulations of omalizumab to optimize treatment outcomes in patients with chronic urticaria.

REFERENCES

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