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Letter to the editor

Linezolid-induced angioedema and urticaria in a patient with renal failure

Dear editor,

Linezolid has demonstrated excellent activity against drug-resistant Gram-positive bacteria infections, such as staphylococci, streptococci, and enterococci.¹ However, linezolid is associated with a wide range of adverse effects such as nausea, diarrhea, vomiting, headache, and serotonin-like syndrome.² Hematologic side effects, such as thrombocytopenia and anemia, can also occur after linezolid treatment.² Nevertheless, angioedema and urticaria due to linezolid have not been reported in previous literature. Here we report a case of a patient who developed angioedema and urticaria after linezolid treatment.

A 48-years old Chinese man was admitted to our hospital with complaints of fever for three days. He had been diagnosed with chronic kidney disease (CKD) caused by hypertensive nephropathy for five years, and began peritoneal dialysis three years prior. He had no history of allergy. He was treated with ceftazidime-sulbactam before we got the culture results. Three days later, ascite culture was positive for vancomycin-sensitive *Enterococcus faecium*. Considering the safety and effectiveness of antibiotic therapy, he was started on 600 mg linezolid intravenous (i.v.) twice daily. Meanwhile, we removed the tube for peritoneal dialysis and changed it to hemodialysis. 12 h after linezolid therapy, he suffered serious swelling of the bilateral eyelids and urticaria in the body. 12 h later, swelling aggravated, and blood test showed that eosinophilia had increased to 34%. Linezolid was discontinued; cetirizine and one dose of dexamethasone (5 mg) were prescribed. We changed the antibiotic to vancomycin for enterococci abdominal infection. 12 h later, the swelling was in remission and the urticaria had disappeared. 24 h after the withdrawal of linezolid treatment, the patient was totally relieved from swelling of the eyelids and urticaria. Eosinophilia gradually declined to normal levels after ten days.

We attributed the cause of angioedema and urticaria to linezolid treatment because these side effects developed after the treatment with linezolid, but resolved quickly after the withdrawal of linezolid treatment. The other medications were continued, including ceftazidime-sulbactam. There was

no evidence indicating suspicious food intake at the time the rash developed. Based on the Naranjo adverse drug reaction probability scale, the calculated score for a treatment-related adverse event if angioedema and urticaria due to linezolid was 8 out of a maximum of 13 points, indicating that it is a probable cause.³

Acquired angioedema may be caused by drugs, such as antibiotics, nonsteroidal anti-inflammatory drugs, angiotensin-converting enzyme inhibitors, and radiocontrast media.^{4,5} It can be an allergic (IgE-mediated) or non-allergic hypersensitivity reaction, with similar clinical presentation.⁵ However, the mechanism of drug-induced angioedema and urticaria remains unclear.

In summary, this is the first report of the adverse effects of angioedema and urticaria following linezolid treatment. We report this case to increase clinicians' awareness of additional adverse effects of linezolid, especially for patients with renal dysfunction, who have increased risk of developing these side effects.

Conflict of interest

All authors declare to have no conflict of interest.

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