

Anaphylactic reaction to clarithromycin in a child

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Key words: anaphylaxis; biaxin; clarithromycin; drug allergy.

Clarithromycin is a macrolide characterized by the presence of a 14-carbon-atom lactone ring (1). It is often used to treat bacterial infections including *Helicobacter pylori* and commonly serves as a substitute for patients with a penicillin allergy. Allergic reactions associated with use of macrolides are uncommon and occur in 0.4–3% of treatments (1). In this study, we describe a child presenting with an anaphylactic reaction to clarithromycin.

A 4-year-old girl, with a history of controlled asthma, atopic dermatitis and multiple food allergies was hospitalized due to an asthma exacerbation. Her food allergies included: peanut, egg, milk, soy, lentils and chickpeas. Diagnosis was established by corroborating clinical history with positive skin prick tests and specific IgE levels. She reported well-controlled asthma-treated prophylactically with daily combined fluticasone/salmeterol with exacerbations associated mainly with upper respiratory infections. Her atopic dermatitis was well-controlled with use of skin moisturizers.

Three days prior to her hospitalization, she presented with increased cough, rhinorrhoea and difficulty breathing with only mild improvement after bronchodilator treatment. A chest X-ray performed in the emergency room suggested bilateral bronchopneumonia.

During her hospitalization, she was treated with clarithromycin, previously well tolerated by the patient. On the 4th day of treatment, within 1 h of receiving her morning dose, she developed facial oedema, difficulty breathing, urticaria, abdominal pain, diarrhoea and cyanosis. Respiratory rate was 32/min, heart rate was 150/min and oxygen saturation measured at room air was 86%.

She was treated with four doses of epinephrine at 30-min intervals because of persistent symptoms. She was also given parenteral diphenhydramine and hydrocortisone with gradual improvement. She was not exposed to allergenic food before the reaction.

This is the first description of a child with severe anaphylactic reaction to clarithromycin in the medical literature. Previous exposure to clarithromycin in the patient described and the appearance of a reaction during the 4th day of treatment was consistent with an IgE-mediated reaction involving a sensitization phase. The relatively short interval between the culprit dose and the appearance of symptoms is also in line with a type I hypersensitivity reaction. As there are no commercial tests for specific IgE levels or validated allergy skin test for clarithromycin, clinical history associated with a drug challenge remains the most valuable diagnostic tool in such cases. In this case, the life-threatening reaction experienced by the patient precluded the use of an oral challenge to confirm her clarithromycin allergy.

It is possible that the highly atopic background of the patient and especially her current asthma exacerbation might have contributed to the clinical severity of the reaction to clarithromycin. It was previously reported that severe allergic reactions to drugs including antibiotics were associated with risk factors such as asthma, atopy or other drug allergy (2).

Allergic reactions to macrolides are usually described in the medical literature as case reports mainly to erythromycin and spiramycin (3). There is one case report describing a bronchospastic reaction to clarithromycin during drug challenge in a woman evaluated because of adverse drug reactions (4). Given that clarithromycin is reported to have less adverse events and better tolerability when compared with other macrolides (5) and that its use is reported to be on the increase among children in North America (6), it is crucial to increase the awareness to life-threatening allergic reactions associated with clarithromycin.

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Accepted for publication 13 December 2008
Allergy 2009

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DOI: 10.1111/j.1398-9995.2009.01990.x

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