

A Severe Laryngeal Angioedema Reaction from Cefadroxil in a Patient with No Known Allergies to Penicillins

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ABSTRACT

We report a life-threatening anaphylactic reaction to cefadroxil in a 60-year old female with no previous history of allergies to penicillins. Cefadroxil is a first-generation cephalosporin and anaphylactic reactions to it in patients with no previous history of penicillin allergy are very rare. Since cefadroxil is a commonly prescribed antibiotic for both adults and children in the Caribbean, an appropriate level of caution should be exercised in its use even with no reported history of previous allergies to the penicillin class of medications.

Keywords: Angioedema, cefadroxil

Reacción de Angioedema Laríngeo Aguda a Partir del Cefadroxilo en un Paciente sin Alergias Conocidas a las Penicilinas

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RESUMEN

Se reporta una reacción anafiláctica grave frente al cefadroxilo por una mujer de 60 años sin la historia previa de alergias a las penicilinas. El cefadroxilo es una cefalosporina de primera generación, y muy raras veces causa reacciones anafiláticas en pacientes sin historia previa de alergia a la penicilina. Puesto que el cefadroxilo es un antibiótico que comúnmente se prescribe tanto para adultos como para niños en el Caribe, debe tenerse un nivel apropiado de precaución a la hora de usarlo, incluso cuando no se reporte una historia de alergias previas frente a los medicamentos antibióticos del grupo de la penicilina.

Palabras claves: Angioedema, cefadroxilo

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We describe a rare anaphylactic reaction to cefadroxil – a first generation cephalosporin in an elderly Caribbean female with no known history of drug allergies. Anaphylactic events to cephalosporins independent of any history of penicillin/amoxicillin allergy are rare [0.004% to 0.015%] (1). The course of acute urticaria and angioedema is unpredictable and attacks vary in severity from mild to fatal from laryngeal obstruction (2). Drug induced angioedema is seen in 0.16% of medical inpatients (3).

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CASE REPORT

A 60-year old Caribbean female of African descent living in Nevis with a known history of non-insulin dependent diabetes mellitus (NIDDM) and no known drug allergies was admitted and managed for unstable angina. At the time of discharge, she was prescribed cefadroxil 500 mg orally twice a day for five days to treat an upper respiratory tract infection. The patient was given the first dose of this medication before leaving the hospital. She developed an acute, severe urticaria and angioedema reaction approximately 30 minutes after administration of this first dose of the medication. She developed hoarseness of voice, difficulty breathing, tightness in her chest and throat, swelling of tongue and face and bronchospasm. Figure 1 shows the patient after intubation with the characteristic signs of severe angioedema: facial swelling and swelling of the tongue and throat. Further doses of cefadroxil were immediately discontinued. Blood



Fig. 1: 60-year old female with angioedema of head and neck after receiving a single dose of cefadroxil. Note swelling of face, lips and tongue. Patient was intubated to protect her airway.

pressure, pulse and all vital signs were monitored. Injections of epinephrine and corticosteroids were administered. Antihistamines and inhaled bronchodilators and intravenous insulin were also given to the patient. Emergency endotracheal intubation was required as the patient developed laryngeal oedema with stridor and respiratory distress. Tracheostomy was a choice but was avoided because of successful intubation. Over the next few days, the patient's symptoms of angioedema and urticaria abated and the patient was successfully extubated. She was discharged from the hospital without further complications. Note was made in the patient's medical record of severe allergic reaction to penicillins, and the cephalosporin, cefadroxil.

DISCUSSION

Hypersensitivity reactions in penicillins are well known and can range from mild to severe. IgE-mediated reactions – such as anaphylaxis or hypotension, laryngeal oedema, wheezing, angioedema, or urticaria – are likely to become more severe with time. Cefadroxil use was first described in 1976 (4, 5). Because of its longer half-life and activity against both gram positive and gram negative organisms, it has been recommended in the management of infections in the respiratory tract, urinary tract, skin and soft tissues, and bones and joints (6).

As a first generation cephalosporin, cefadroxil is considered safe for most clinical applications. A 1993 study (7) comparing the safety and efficacy of clarithromycin and cefadroxil suspensions in the treatment of mild to moderate skin and skin structure infections in children found an adverse event rate of 35% in the cefadroxil group, most of which were gastrointestinal and mild. A 2003 study (8) of 296 patients compared treatment of azithromycin and cefadroxil for the treatment of uncomplicated skin infections and found an adverse event rate of 4% (5 out of 139) for the

cefadroxil group, again, mostly mild and gastrointestinal. Similarly, a 1982 study (9) of 1141 children on cefadroxil reported 8.3% (95 children) with adverse events, mostly mild and gastrointestinal.

Cefadroxil has a chemical side chain at position 7 of its structure, similar to penicillin or amoxicillin. This increases the risk of an allergic reaction to cefadroxil in individuals allergic to penicillin. The product literature for cefadroxil states that the use of cefadroxil is contraindicated in known hypersensitivity reactions to cephalosporins (10), with appropriate precautions in known or reported history of hypersensitivity to penicillins or other beta-lactam antibiotics (10). However, important or life-threatening angioedema has been reported to be less than 1% for cefadroxil (11). A PubMed search (done on June 29, 2010) using the keyword 'cefadroxil' yielded 658 records. 'Cefadroxil adverse reaction' yielded only 6 records. 'Cefadroxil AND allergy' yielded 20 records. Three of these were review articles (12–14) and discussed general hypersensitivity reactions to cefadroxil similar to that of the penicillins in general.

The classic features of developing angioedema described in the case above are 'not-to-miss' features for every clinician. Prompt action is necessary to prevent morbidity and mortality. The most important action to take in a patient with suspected drug-induced angioedema is to discontinue the pharmacological agent. Epinephrine, diphenhydramine and intravenous methylprednisolone have been proposed for the medical management of airway obstruction (15). If the acute airway obstruction leads to life-threatening respiratory compromise, an emergency cricothyroidotomy must be performed (15).

Cefadroxil is commonly prescribed in the Caribbean to adults (16) and children (17). Since it would not be unusual for a practitioner to prescribe this oral medication to someone with no known history of penicillin allergy, this case report serves as a cautionary note of rare but possible outcomes. Furthermore, it is worth noting that the severe, life-threatening reaction occurred in an elderly person. It is possible that she had had a milder reaction to a penicillin earlier in life but did not recall this. It is hoped that as electronic medical records become more prevalent in Caribbean hospitals, such events will become even rarer, if that were the case.

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