Anaphylactic Shock Developing in Association with Cefuroxime Axetil Use

Sefuroksim Aksetil Kullanımına Bağlı Gelişen Anafilaktik Şok

Sefuroksim Aksetil Kullanımı Sonrası Anafilaktik Şok / Anaphylactic Shock After Cefuroxime Axetil Use

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Özet

Sefalosporinler beta laktam grubu antibiyotik olup günümüzde enfeksiyonların tedavisinde sıklıkla kullanılmaktadır. Ayrıca kullanılmayla ilişkili olarak sefalosporinlerle ilgili alerjik reaksiyonlarda artış vardır. 31 yaşındaki kadın hasta acil servise yaygın kızarıklık, nefes darlığı, bulantı ve bilinç değişikliği ile başvurdu. Hastanın semptomları 500 mg sefuroksim aksetili oral aldıktan yarım saat sonra başladı. İlaca bağlı anafilaktik şok düşünüldü. Literatürde sefuroksim aksetil ile ilişkili 5 tane benzer vaka mevcuttur. Bu vaka sunumunda üst solunum yolu enfeksiyonu amacıyla reçetelenen sefuroksim aksetil içeren ilacın alımından sonra gerçekleşen anafilaktik şok vakası literatür tartışması ile ele alınmıştır.

Anahtar Kelimeler

Sefuroksim Aksetil; Sefalosporin; Anafilaktik Şok; İlaç Alerjisi

Abstract

Cephalosporins, a class of beta lactam antibiotics, are frequently employed today in the treatment of infection. There is also an associated increase in the frequency of cephalosporin-related allergic reactions. A 31-year-old woman presented to the emergency department with widespread rubor, nausea, shortness of breath and altered consciousness. The patient's symptoms had commenced half an hour after the oral ingestion of a drug containing 500 mg cefuroxime axetil. Drug-related anaphylactic shock was suspected. Literature contains five similar cases associated with cefuroxime axetil. This case report describes a case of anaphylactic shock developing after the ingestion of a drug containing cefuroxime axetil prescribed for upper respiratory tract infection, with a discussion of the relevant literature.

Keywords

Cefuroxime Axetil; Cephalosporin; Anaphylactic Shock; Drug Allergy

DOI: 10.4328/JCAM.1927 Received: 11.03.2014 Accepted: 25.03.2014 Printed: 01.08.2013 J Clin Anal Med 2013;4(suppl 4): 394-5
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Introduction

Beta lactam antibiotics, especially penicillin and cephalosporins, are frequently prescribed drugs. Many drug-related early hypersensitivity reactions are associated with these [1]. Cephalosporins have been shown to be responsible for some 15%-20% of severe allergic reactions [2]. Therapeutic use of cephalosporins is increasing, and a parallel increase in allergic reactions related to these drugs is also to be expected [3]. Cross reaction has been reported to play a role in allergy development. Cross reaction levels very from 0% to 68% among different cephalosporin generations. Less cross reaction is observed in 3rd generation cephalosporins compared to 1st and 2nd generations [4]. This case report discusses a picture of anaphylactic shock after use of cefuroxime axetil, a 2nd generation cephalosporin.

Case Report

A 31-year-old woman presented to the emergency department with widespread rubor, nausea, shortness of breath and altered consciousness. Her history revealed no chronic disease and no history of medical allergy. On arrival her general condition was poor. She was lucid with a Glasgow Coma Score (GCS) of 14. Blood pressure could not be measured. Heart rate was 120/min, temperature 360 C and respiratory rate 20/min. No pathology was observed at ECG. The patient's history revealed that half an hour previously she had taken a drug containing 500 mg cefuroxime axetil prescribed for flu-like symptoms at an another center. Widespread allergic eruption and erythema in the entire body were observed at physical examination. Other system examinations were normal. Drug-related anaphylactic shock was suspected. Aggressive fluid therapy was initiated, and the patient was given 0.5 mg adrenalin IM and 80mg (1mg/kg) corticosteroid IV. Positive inotropic support was initiated when blood pressure did not improve after 20 min. General condition improved, regulation of blood pressure was established and the rubor resolved. The patient was kept under observation for 24 h and in the absence of any additional problem was discharged in a healthy condition.

Discussion

Anaphylactic shock is the most serious form of anaphylaxis. As with other shock situations, it results incardiovascular deficiency and insufficient blood circulation due to imbalance between tissue oxygen requirements and oxygen supply. Foodstuffs, insect bites and drugs are the most common causes of anaphylactic shock [5]. Allergic reactions may take the form of simple urticarial rash or severe anaphylaxis and anaphylactic shock. Drug-related allergic reactions are frequently seen. Allergy to penicillin is the most studied drug allergy and is regarded as a model in these [4].

Cross reaction between penicillin and cephalosporin families due to the similarity in their structures has created concern since these drugs began being used. Both have a ring structure containing a beta lactam ring and sulfur, responsible for their antibiotic effect. Cephalosporins have a 6-member dihydrothiazine ring, while the penicillin group has a 5-member thiazolidine ring. In vitro studies have confirmed an antigenic similarity between penicillin and some cephalosporins [6]. In those with penicillin allergy, the probability of a cross reaction between early cephalosporins (1st and 2nd generation) with a side chain similar to that of penicillins is higher compared to later generations (3rd and 4th) with no similar chain [4].

Several anaphylactoid reactions developing in association with cephalosporins have been described in the literature, and there are a few case reports concerning anaphylaxis associated with cefuroxime, one of the cephalosporins. In one case report, Ilhan et al. discussed type 2 Kounis syndrome and anaphylactic shock developing after the use of oral cefuroxime. They reported that Kounis syndrome developed after oral cefuroxime use, the first such report apart from Kounis syndromes developing after IV and IM cefuroxime previously discussed in the literature [7]. Hasdenteufel et al. described a picture of anaphylactic shock developing after oral cefuroxime use, and reported that sensitivity to the methoxyimino group present in some beta lactam antibiotics had been determined after skin tests performed during follow-up, and that allergic reactions may develop following cross reaction between beta lactam antibiotics [8].

Conclusion

This care report describes a picture of anaphylactic shock developing after oral cefuroxime use with no underlying allergic history or additional disease. Similar cephalosporin group antibiotic-related reactions have been reported, and this is the sixth case associated with cefuroxime axetil in the literature.

Competing interests

The authors declare that they have no competing interests.

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How to cite this article:
Sahin A, İmamoğlu M, Özcan A, Karaca Y, Gunduz A. Anaphylactic Shock Developing in Association with Cefuroxime Axetil Use. J Clin Anal Med 2013;4(suppl 4): 394-5.