ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at: www.ijmacr.com

Volume – 4, Issue – 3, May – June - 2021, Page No. : 213 – 216

Adverse reaction to amoxicillin: A case report

[1]Maj Anubhav Chakrabarty, BDS, PG Resident in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

[2]Lt Col Sonali Sharma, MDS, Ph.D., Professor & HOD in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

[3]Maj Sourabh Sharma, BDS, PG Resident in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

[4]Maj Sumit Sharma, BDS, PG Resident in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

[5]Maj S Gopi Pavan Sudhir, BDS, PG Resident in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

Corresponding Author: Maj Anubhav Chakrabarty, BDS, PG Resident in Department of Conservative Dentistry & Endodontics, Army Dental Centre (Research & Referral), New Delhi, India.

How to citation this article: Maj Anubhav Chakrabarty, Lt Col Sonali Sharma, Maj Sourabh Sharma, Maj Sumit Sharma, Maj S Gopi Pavan Sudhir, "Adverse reaction to amoxicillin: A case report", IJMACR- May – June - 2021, Vol – 4, Issue -3, P. No. 213 – 216.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Penicillin is the drug that most often leads to allergic reactions and anaphylaxis. The incidence of adverse events triggered by Penicillins is believed to be between 1% and 10%. Up to one-tenth of these episodes are life-threatening, with the most serious reactions occurring in patients with no history of allergy. The case of a 52 years old male who had a severe allergic reaction to amoxicillin prior to a dental appointment is described. The literature on penicillin hypersensitivity is reviewed and recommendations for management of an allergic reaction in the pediatric dental office are discussed.

Key words: Amoxicillin, Allergic, Penicillin

Introduction

Amoxicillin is a commonly prescribed antibiotic for treatment of community-acquired bacterial infections in children. Given that it is a first-line treatment for otitis media and sinusitis, and given the high frequency of viral-induced exanthemas including hives in this age group, it is not surprising that rashes developing during the course of amoxicillin treatment are frequently reported. Furthermore, up to 70 % of patients receiving amoxicillin

during viral infections, particularly Epstein–Barr virus, are reported to develop a self limiting maculopapular rash.[1]

Common adverse effects of AMT are pain at injection site, nausea and diarrhea on oral administration, thrombophlebitis etc. Hypersensitivity reactions include; maculopapular or morbilliform type of skin rash, itching, urticaria, vomiting, fever, wheezing, angioneurotic edema and serum sickness.[2] Exfoliative dermatitis is less common, and anaphylaxis reactions are rare. Lymphocytes from both drug-induced immediate and delayed cutaneous hypersensitivity reactions form the basis of diagnosis with such offending drugs. Management of hypersensitivity skin reactions is mainly discontinuation of the offending drug along with administration of pheniramine maleate and corticosteroids.[3]

Management of AMT induced cutaneous reactions includes; early identification and withdrawal of the offending drug, rapid initiation of supportive care by fluid and electrolyte replacement, symptomatic treatment with antihistaminic drugs like diphenhydramine and topical emollients like calamine and liquid paraffin, helps relieve itching and skin rash.[4] However, serious anaphylactic reactions require the urgent administration of adrenaline to counter the cardiac collapse as well as corticosteroids to counteract the effect of inflammatory mediators released from the mast cell. Although clinical evidence for the use of systemic immunosuppressive therapy is lacking, but in common practice this is often prescribed.[5]

Case Report

A 52 years old male patient reported to department of Endodontics for an intentional root canal treatment wrt 46. There was h/o hypersensitivity/allergic reaction to eyedrops one year back where the patient presented with swelling and scars on face which resolved over 6 months with steroids. Family history was non- contributory. Intraoral examination showed that there was severe attrition wrt 46. Patient was administered 1:80000 LA with adrenaline and root canal access opening was performed following standard endodontic treatment protocol. Irrigants used were normal saline and 3% sodium hypochlorite. Patient was prescribed Cap Amoxicillin 500 mg. Next morning at 06:00 hours the patient presented with painless swelling on right side of face extending intraorally. Swelling was soft, fluctuant, no pus discharge, slow growing, increasing in size and there were rashes on face- and Urticaria.

Cap Amoxicillin 500 mg was discontinued and Inj. Hydrocort was administered along with tab Prednisolone 20 mg OD for 5 days, Lactocalamine lotion and steroid ointment for scars were prescribed. Swelling and scars resolved after 15 days and the treatment was deferred till symptoms resolved. Patient was under telephonic follow up. All symptoms and scars resolved after 3 weeks.

Discussion

The estimated incidence of allergy to amoxicillin ranges from 1 to 10 %. However, many cases are diagnosed as allergic reactions without performing appropriate diagnostic tests. A detailed clinical history needs to account for viral exanthemas in the differential diagnosis although the distinction according to history is often challenging.[6] True allergic reactions to amoxicillin are mediated by the immune system and are classified into immediate (developing within 30 to 60 minutes of drug ingestion) or non-immediate (beyond 1 hour of ingestion) type reactions. Immediate reactions may range in severity from eruptions limited to the skin (hives/angioedema) to reactions involving more than one organ system or hypotension (that is, anaphylaxis). The risk of fatal anaphylaxis with amoxicillin is not well documented,

although the risk with penicillin is estimated at 1 in 100,000.[7]

Prescribed medicines frequently cause adverse drug reactions manifesting in diverse forms. Maculopapular skin rash is one such manifestation associated with AMT; developed due to an immune-mediated hypersensitivity reaction. Maculopapular skin rashes consist of macules (distinct flat areas) and papules (raised lesions). They may or may not be associated with itching but are commonly erythematous in nature. Manifestation may be localized or may spread all over the body causing generalized eruptions. These reactions are frequent in pediatric population but occur in adults too.[8] Reported literature has revealed that, AMT induced hypersensitivity cutaneous reactions are immediate or rapid i.e. within minutes to an hour in most of the cases. Same was observed in this case, with a development of cutaneous reaction within 2 hours of first dose of AMT administration. However some rare adverse effects may develop even after several days. Evidence suggests that, longer the interval between drug intake and appearance of the reaction, less the probability of being immunoglobulin-E mediated.[9] We reported a case of allergic reaction to Amoxycillin in a 52 years old male patient.

Weisser et al[10] presented a case series that describes three children (8-year-old white girl, 2-year-old white boy and 14-month-old Chinese boy) who presented with varied onset of allergic reactions to amoxicillin, specifically immediate (within the first hour after exposure) and non-immediate onset. One child developed immediate onset allergy to oral challenge with amoxicillin although his clinical history was evident for non-immediate onset allergy to amoxicillin. He was the only case that had a positive skin test to penicillin. Two other children presented with reactions toward the end of their treatment course of amoxicillin, yet one patient developed immediate onset allergy while the other patient developed non-immediate onset allergy after challenge. Fonseca et al reported a case in a 5 years 3 month-old female who had a severe allergic reaction to amoxicillin prior to a dental appointment.

Mohammed et al[10] reported a case of maculopapular skin rash developed due to AMT hypersensitivity reaction in a 48-year-old Indian male patient. Pheniramine maleate, hydrocortisone and skin protecting lotion were prescribed to manage the situation. Our was the case in a 52 years old male patient.

Ponvert et al[11] and Zambonino et al[12] reported that 88 % and 92 % of healthy children were diagnosed with non-immediate allergy following reaction to amoxicillin while 12 % and 8 % were given a diagnosis of immediate allergy to amoxicillin. The authors further demonstrated that children with a likelihood of beta-lactam allergy were more likely to experience early onset and greater severity of disease.

Conclusion

Authors found that amoxicillin is a commonly prescribed antibiotic that may trigger immediate and non-immediate allergic reactions in any age group. Early detection and subsequent withdrawal of the offending drug is the very first step for the management of such incidences.

References

1. Ring J, Grosber M. Urticaria: attempts at classification. Curr Allergy Asthma Rep. 2012;12:263–6.
2. Fernandez TD, Mayorgaa C, Ariza A, Corzo JL, Torres MJ. Allergic reactions to antibiotics in children. Curr Opin Allergy Clin Immunol. 2014;14:278–85.

3. Jappe U. Amoxicillin-induced exanthema in patients with infectious mononucleosis: allergy or transient immunostimulation? Allergy. 2007;62:1474–5.
4. Romano A, Warrington R. Antibiotic allergy. Immunol Allergy Clin N Am. 2014;34:489–506. 5. Pavlos R, Mallal S, Ostrov D, Buus S, Metushi I, Peters B, et al. T Cell-mediated hypersensitivity reactions to drugs. Annu Rev Med. 2015;66:439–54.
5. Dodiuk-Gad RP, Laws PM, Shear NH. Epidemiology of severe drug hypersensitivity. Semin Cutan Med Surg. 2014;33(1):2–9.
6. Bousquet PJ, Pipet A, Bousquet-Rouanet L, Demoly P. Oral challenges are needed in the diagnosis of B-lactam hypersensitivity. Clin Exp Allergy. 2007; 38:185–90.
7. Weisser C, Ben-Shoshan M. Immediate and non-immediate allergic reactions to amoxicillin present a diagnostic dilemma: A case series. Journal of medical case reports. 2016 Dec;10(1):1-5.
8. Da Fonseca MA. Adverse reaction to amoxicillin: A case report. Pediatric dentistry. 2000 Sep 1;22(5):401-4.
9. Mohammed W, Das SK, Srikanth S, Rao VUM. Maculopapular skin rash due to amoxicillin tri-hydrate hypersensitivity reaction: A case report. Int J Basic Clin Pharmacol 2015;4:175-8.
10. Ponvert C, Perrin Y, Bados-Albiero A, Le Bourgeois M, Karila C, Delacourt C, et al. Allergy to betalactam antibiotics in children: results of a 20-year study based on clinical history, skin and challenge tests. Pediatr Allergy Immunol. 2011;22:411–8.
11. Zambonino MA, Torres MJ, Munoz C, Requena G, Mayorga C, Posadas T, et al. Drug provocation tests in the diagnosis of hypersensitivity reactions to non-steroidal anti-inflammatory drugs in children. Pediatr Allergy Immunol. 2013;24:151–9.

Legend Figures

Figure 1: Maculopapular rash

Figure 2: Maculopapular rash

Figure 3: Intraoral allergic reaction