



Research Article

A CASE REPORT ON AMOXICILLIN INDUCED STEVENS- JOHNSON SYNDROME

Rispa Darabadi ^{1*} and Karasani Harini ²

¹ Assistant Professor, Pharmacy Practice Department, Hindu college of pharmacy, Guntur, India

² V/VI pharm D, Pharmacy Practice Department, Hindu college of pharmacy, Guntur, India

*Corresponding Author Email: gladdyrispa@gmail.com

Article Received on: 02/07/21 Approved for publication: 04/08/21

DOI: 10.7897/2230-8407.1207152

ABSTRACT

Steven-Johnson syndrome (SJS) is a rare, serious disorder of the skin and mucous membrane that is usually a reaction to medication. It usually starts with flu-like symptoms, followed by a painful rash that spreads and blisters. Other symptoms include Fever, sore mouth and throat, Fatigue, burning eyes, extensive skin and mucous membrane lesions (i.e., mouth, nose, esophagus, anus, and genitalia), epidermis detachment, and acute skin blisters. In 95% of case reports, drugs were identified to be an important cause for the development of SJS. The below is a case report of A 37-year-old male patient hospitalized with rashes over the body and fever, after oral consumption of Amoxicillin drug for cough and sore throat through OTC prescription. The patient has taken three doses of Amoxicillin and due to lack of awareness on Adverse drug reactions, the patient ignored the rashes that were developed after the first dose. This case study discusses the possibility of serious hypersensitivity reactions with Amoxicillin that rarely occur and can be extremely harmful and life threatening, brief knowledge on Stevens-Johnson syndrome and also some of the preventive measures to control the adverse reactions due to drugs.

KEY WORDS: Steven Johnson syndrome, Amoxicillin, Adverse drug reaction.

INTRODUCTION

Adverse drug reaction (ADR) is defined according to WHO (2002 a) as any response to a drug which is noxious and unintended and occur at doses normally used in man for prophylaxis diagnosis or therapy of physiological function. ADR's are associated with increased economic burden and prolonged length of hospital stay, increased death. Many studies report that ADR's are responsible for large number of hospitals admissions¹.

Cutaneous drug reactions are the most common adverse drug reaction². Steven Johnson Syndrome (SJS) and Toxic epidermal necrolysis (TEN) are potentially serious cutaneous reactions that are characterized by high fever, rashes, widespread blistering exanthema of macules, atypical target like lesions accompanied by mucosal involvement³. SJS and TEN are also accompanied by complications in various organs like liver, kidney, lung. However, the initial presentations include non-specific symptoms like fever, discomfort with swallowing and stinging eyes⁴.

Incidence of SJS and TEN is 0.05 to 2 persons per million population per year. SJS/TEN can present in any age group, occurs more frequently in women, HIV infected patients and elderly⁵. Females are most commonly affected than males, usually in the ratio of 3:2. Mortality rate varies from 3-10% for SJS and from 20-40% for TEN⁶.

SJS – TEN most commonly occur among the prescribed drugs. Early detection of drug helps in prompt withdrawal of the drug, thus reducing mortality and morbidity among the patients with SJS-TEN⁷. A major percentage of this is caused by medications while remaining is due to infections like HIV, Hepatitis virus,

Herpes virus, Mycoplasma pneumoniae, others include idiopathic malignancy⁸. A substantial number of medications have been implicated in the etiology of SJS/TEN. They include: Antibiotics namely Sulfonamides (Trimethoprim-sulfamethoxazole), Amino penicillins (Amoxicillin/Clavulanic acid), Fluoroquinolones (Ciprofloxacin, Norfloxacin), Tetracyclines (Doxycycline), Macrolides (Azithromycin), Cephalosporins (Cefotaxime), Metronidazole; Anticonvulsants namely Phenytoin, Lamotrigine, carbamazepine, Phenobarbital, sodium valproate, levetiracetam; Sulfonyleureas namely Glipizide; Diuretics namely Furosemide, Acetazolamide; Analgesics namely NSAIDs (Diclofenac, Ibuprofen), Paracetamol/ Acetaminophen; Antidepressants namely Mirtazapine, Duloxetine; Tyrosine kinase inhibitors namely Imatinib; Xanthine oxidase inhibitor namely Allopurinol; Androgenic hormones namely Danazol, Androgenic anabolic steroids; Anti neoplastic agents namely Paclitaxel, Docetaxel; Anti-viral drugs like Neuraminidase inhibitor (Oseltamivir), Nucleoside reverse transcriptase inhibitor (Adefovir), Non-nucleoside reverse transcriptase inhibitor (Nevirapine); Immuno suppressants/ immune modulators like Immuno-modulatory imide drugs (IMiDs)-Thalidomide, Lenalidomide, Imidazole nucleoside-Mizoribine; Angiotensin-converting enzyme inhibitors namely Ramipril; other agents like carbamates, Aspirin, Iopentol⁴.

Hospitalization is mandatory to treat this. The treatment employed in management of the patient depends on the etiology of the disease. The first step to the treatment is to identify and eliminate the causative factor. The next step is the provision of supportive care for the patient. The final step is symptomatic treatment^{9,10}.

CASE REPORT

A 37-Year-old male patient of height 5.9 feet and weight 74kg (BMI:24.1Kg/m²) consults general physician complaining of fever, itchy rashes over the hands, stomach, blisters on lips and mouth since a day. He gave a history of sore throat and cough for which he has taken Amoxicillin 500mg, which was dispensed as an OTC medication by a local retail pharmacist. The patient has been administered 3doses of Amoxicillin. After 2doses patient observed blisters in the mouth. Due to lack of knowledge regarding the adverse effects of drugs the patient has administered the third dose. By next day morning patient has been suffering from fever and identified itchy rashes all over the body and blisters in mouth and on lips.

The patient has immediately consulted the physician. On examination patient was ill-looking, conscious, oriented with all his vitals in normal range and rashes all over the body and blisters in mouth, lips, tongue and based on his medication history the doctor diagnosed it as Steven Johnson Syndrome and advised for hospitalisation. His laboratory investigation data on admission were elevated leucocyte count (17000cells/cubic mm) and all other investigations were normal including the viral and bacterial infections tests. The patient was treated with parenteral antibiotics (other than aminopenicillins), antihistamines, steroids, mouth paints and nutritional supplements. Patient recovered for 11 days and discharged.



Figure 1: Image Illustrating the adverse drug reaction caused by amoxicillin

DISCUSSION

Steven-Johnson syndrome (SJS) is a rare, serious disorder of the skin and mucous membrane that is usually a reaction to medication. It usually starts with flu-like symptoms, followed by a painful rash that spreads and blisters. Other symptoms include Fever, sore mouth and throat, Fatigue, burning eyes, extensive skin and mucous membrane lesions (i.e. mouth, nose, esophagus, anus, and genitalia), epidermis detachment, and acute skin blisters. In 95 % of case reports, drugs were identified to be an important cause for the development of SJS. In this case, Amoxicillin is identified as an etiological agent.

Amoxicillin is a beta lactam amino-penicillin antibiotic that is used majorly to treat upper respiratory tract infections, pharyngitis and tonsillitis, typhoid fever (enteric fever), Anthrax. It is usually available as tablets or oral suspensions. The most common adverse effects of Amoxicillin are GI effects (e.g., nausea, vomiting, diarrhea), hypersensitivity reactions (e.g., rash). In this case the patient has consumed 500mg of amoxicillin. A total of three doses one on Day 1 at bedtime, remaining two doses on Day2. On Day3 rashes and muco-cutaneous blisters in mouth were identified and immediately brought to the physician's notice. The patient was hospitalized, being diagnosed as Steven

Johnson Syndrome induced by Amoxicillin. Based on the casualty assessment of Naranjo's Scale, the reaction was probable with score of 5 and the severity of this predictable reaction was found to be mild-level-2. On hospitalization, appropriate treatment was provided with antihistamines and the drug Amoxicillin was stopped and instead of its other antibiotics like Tab. Azithromycin (for cough and sore throat) and Inj. Linezolid, Inj. Ceftriaxone (for supra infections) were prescribed. To treat mouth blisters medicated mouth paints, Inj. Pantoprazole (proton pump inhibitor) and certain multivitamin supporters were given for quick recovery.

CONCLUSION

A causal association exists between the adverse effect (AE) and Amoxicillin. A frequent use of Amoxicillin and subsequent ADR's cannot be avoided in developing countries such as India, where infectious diseases are widely prevalent. This case report describes the risk of serious hypersensitivity reactions with Amoxicillin and clavulanic acid, which can be dangerous and life-threatening. Clinicians and clinical pharmacists also need to be more vigilant when administering this drug. Appropriate drug therapy and timely reporting of ADRs is therefore necessary to prevent non-compliance with treatment with subsequent clinical failure and increased resistance to antimicrobials.

RECOMMENDATIONS

In order to prevent ADR's, we recommend:

- Surveillance, monitoring and educating the patients is important in preventing adverse drug reactions.
- ADR's should be recorded in file for further reference and are communicated to patients.
- When we observe any reactions on administration of a drug, immediate consultation of doctor is suggested rather than usage of OTC medications.
- Proper audit of prescriptions with ADR and their reporting should be made mandatory.
- Patients should be educated on advantages and disadvantages of self-medication.
- In order to prevent ADR's in future for the same drug, ADR alert card can be provided which includes all the information regarding patient's past drug reactions and their medical, medication history.

ACKNOWLEDGMENT

I would like to express my special thanks to the people who have helped and supported me throughout my case report.

REFERENCES

1. Mohamed M.M. Abdel-Latif, Basel A. Abdel-Wahab, Knowledge and awareness of adverse drug reactions and pharmacovigilance practices among healthcare professionals in Al-Madinah Al-Munawwarah, Kingdom of Saudi Arabia, Saudi Pharmaceutical Journal (2015) 23, 154-161.
2. Vinod K Sharma, Gomathy Sethuraman, Anil Minz, Stevens Johnson syndrome (SJS), toxic epidermal necrolysis (TEN) and SJS-TEN overlap: A retrospective study of causative drugs and clinical outcome. Indian J Dermatol Venereol Leprol.2008;74 (4):238-240.
3. Lyell A. Toxic epidermal necrolysis: An eruption resembling scalding of the skin. Br J Dermatol. 1956;68(11):355-61.
4. Adegbenro Omotuyi John Fakoya, Princess Omenyi, Precious Anthony, Favour Anthony, Precious Etti, David Adeiza Othoinoyi, and Esther Olunu. Stevens -

- Johnson Syndrome and Toxic Epidermal Necrolysis; Extensive Review of Reports of Drug-Induced Etiologies, and Possible Therapeutic Modalities. Open Access Maced J Med Sci. 2018 Apr 15; 6(4): 730–738.
5. Maheen Zaidi, Syeda Kashaf Zaidi, Moomal Bhutto, Mohammad Yasir Umer, Amoxycillin and clavulanic acid induced Stevens-Johnson Syndrome: A Case Report; EXCLI J 2017;16:748-751.
 6. Ignacio Garcia-Doval, LeCleach L, Bocquet H, Otero XL, Roujeau JC. Toxic epidermal necrolysis and Stevens-Johnson syndrome: Does early withdrawal of causative drugs decrease the risk of death? Arch Dermatol. 2000;136(3):323-327.
 7. Kikkeri Narayanasetty Naveen, Varadraj V. Pai, Vijetha Rai, and Sharatchandra B. Athanikar. Retrospective analysis of Steven Johnson syndrome and toxic epidermal necrolysis over a period of 5 years from northern Karnataka, India. Indian J Pharmacol. 2013 Jan-Feb; 45(1): 80–82.
 8. Lin YF, Yang CH, Hu Sindy, Lin JY, et al. Severe cutaneous adverse reactions related to systemic antibiotics. Clinical Infectious Diseases. 2014;58(10):1377-1385.
 9. Bajwa SJ, Kaur J. Stevens–Johnsons syndrome and toxic epidermal necrolysis: Need to look beyond current etiologies, diagnostics, and therapeutics. Medical Journal of Dr. DY Patil Vidyapeeth. 2017;10(1):68-70.
 10. Schneider J A, Cohen P R. Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis: A Concise Review with a Comprehensive Summary of Therapeutic Interventions Emphasizing Supportive Measures. Advances in Therapy. 2017;34(6):1235–1244.

Cite this article as:

Rispa Darabadi and Karasani Harini. A case report on amoxicillin induced Stevens- Johnson syndrome. Int. Res. J. Pharm. 2021;12(7):22-24.

<http://dx.doi.org/10.7897/2230-8407.1207152>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IRJP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publishing quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IRJP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IRJP editor or editorial board members.