



## A case report on Moxifloxacin induced dermatological anaphylaxis reaction

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### ABSTRACT

Drug Induced Anaphylaxis reaction is a very serious hypersensitivity reaction. A 33yrs old female was presented in hospital with chief complaints of fever since 10 days and itching all over the body and rashes since last 2 days with a past history of Typhoid fever and treated with Moxifloxacin, Aceclofenac & Rofecoxib. Patient was diagnosed with drug induced anaphylaxis based on her clinical manifestations and drug history. Anaphylaxis reactions are mostly associated with the drugs. This particular case was managed by administering antihistamines and steroids. These types of reactions should be reported to create awareness among health care providers.

### INTRODUCTION

Drug induced anaphylaxis or anaphylactic reactions is a severe systemic hypersensitivity reaction which has rapid onset and characterized by life threatening airway, breathing & circulatory complications and are usually associated with skin and mucosal changes but not always [1]. Most common drugs that cause anaphylaxis are Non-steroidal anti-inflammatory drugs and beta-lactam antibiotics. Pathophysiology of anaphylaxis is usually due to immunologic but non-immunologic mechanisms also exist [2]. Clinical features of anaphylactic reactions depend on offending agent and organ system involved. Most common symptoms include skin rashes particularly hives or urticaria, itching, angio-edema, low BP, cardiovascular & respiratory problems, nausea, vomiting, diarrhea etc [1,3]. Anaphylaxis is generally diagnosed based on clinical features and confirmed by blood test; for example, histamine or tryptase in serum got elevated during this condition. Skin test can also be performed to verify the mast cell releasability. Other tests like C-reactive protein, allergin-specific IgE, Platelet activating factor can also be performed. Primary management of anaphylactic reactions involves discontinuing the suspected drug. The first line therapy in the management; Epinephrine (Adrenaline) intramuscular injection for adults with a dose range of 0.3 to 0.5ml of a 1:1000 solution given intramuscularly [1,4]. Systemic antihistamines and corticosteroids

either systemic or topical can be indicated as adjunct therapy []. Second-line interventions include; trigger factor elimination, maintaining posture (in case of circulatory instability, respiratory distress, pregnancy and unconscious condition), oxygen and fluid support [].

Here we discuss a case of Moxifloxacin induced anaphylactic reaction developed in 33 year old female.

### CASE REPORT

A 33yrs old female was brought to the hospital on 29/9/2016 with complaints of fever since 10 days and itching & rashes all over body since 2 days.

**On examination (O/E):** all her vitals were normal at diagnosis.

She was further referred to dermatology department to rule out the underlying etiology and for further investigations.

Her past medical & medication history reveals that, she was suffering with typhoid and was on following medications:

1. Inj. Moxifloxacin
2. Inj. Aceclofenac
3. Inj. Rofecoxib.

As all of these 3 drugs have the capacity to induce

hypersensitivity skin reaction, thus it was not certain which drug actually responsible for this condition. Moxifloxacin was considered to be the causative agent as the other two drugs have least reported skin reactions. Hence, based on clinical feature, systemic examination and with the support of past history she was provisionally diagnosed as “Drug Induced Hypersensitivity reaction due to Moxifloxacin” patient was admitted in general medicine department and further diagnostic tests were advised to confirm the diagnosis.

Reports of Ultra sound abdomen and complete urine examination were found to be normal. Whereas renal function tests values were slightly lowered. BUN- 6 mg/dl (7-20), Total protein- 5.2 g/dl (6.4-8.2) and serum albumin- 2.7 g/dl (3.4-5.0).

Peripheral smear of blood shows;

RBCs: Normocytic Normochromic,

WBCs: Neutrophilic Leucocytes,

Platelets: Thrombocytosis

Her Complete Blood count on various dates is shown below:

S.No	Parameters	30/9/2016	1/10/2016	2/10/2016	3/10/2016	5/10/2016
1	HB% (12-15 g/dl)	12.1	11.2	11.3	10.6	11.2
2	RBC (3.8-4.8 million/dl)	3.60	3.72	3.74	3.62	3.78
3	PCV (36-46%)	35.0	31.7	30.9	30.6	32.3
4	MCHC (31.5-34.5 g/dl)	35.0	35.2	36.4	34.8	34.7
5	Total count (150-450 thousand/ $\mu$ l)	26.2	35.1	33.0	27.4	24.2
6	Neutrophils (40-75 % )	80	86	81	-	-
7	Lymphocytes (20-40%)	16	10	15	-	-

Finally, she was diagnosed with “drug induced anaphylaxis reaction (Moxifloxacin)”.

Upon admission she was prescribed with the following medications:

1. Inj. Cefoperazone+Sulbactam 1.5gm IV BD
2. Inj. Clindamycin 600mg IV BD
3. Inj. Pantoprazole 40mg IV OD`
4. Inj. Dexamethasone 8mg IV STAT
5. Inj. Hydroxyzine 5mg IV TID

6. Calasoft Lotioncontains calamine 8%w/w, aloe vera gel 10%w/w, liquid paraffin 10%w/w (for external application)

On day 2 (30/9/2016), patient hadfresh complaints of erythematous rash all over the body with superficial peripheral lesions and burning micturation. Samedrugs were continued with addition of:-

7. Inj. Multivitamin Infusion 1amp in 100 ml NS
8. Inj. Pheniramine maleate 1amp
9. Inj. Ranitidine 1amp

On day 3 (1/10/21016), patient had complaints of burning sensation all over the body,decreased sleep and peritoneal edema. She was prescribed with;

1. Inj. Magnex Forte 1.5gm IV BD
2. Inj. Clindamycin 600mg IV BD
3. Inj. Pantoprazole 40mg IV OD
4. Inj. Decadron 8mg IV STAT

5. Inj. Atarax 5mg IV TID
6. Calasoft Lotion (for external application)
7. Tab. Fexofenadine 120mg PO BD

On day 4 (2/10/2016), patient was observed with decreased redness of rashes less burning sensation, no oral ulcers were present but scaling and peritoneal edema was still present. She was prescribed with;

1. Inj. Pantoprazole 40mg IV OD
2. Inj. Decadron 8mg IV STAY

3. Inj. Atarax 5mg IV TID
4. Calasoft Lotion (for external application)
5. Tab. Allegra 120mg PO BD

On day 5 (3/10/2016), patient complained of burning sensation remain in the body but her examination showed; decreased peri-orbital puffiness, rash & exfoliation of skin, dried pustules, erythema, pitting type edema of feet. Same medications were continued with addition of

Inj. Optineuron 1amp in DNS

On day 6 (4/10/2016), decreased rashes and erythema was observed and the same treatment was continued.

On day 7 (5/10/2016), patient's vitals were normal and she was stable and prescribed with;

1. Inj. Pantoprazole 40mg IV OD
2. Inj. Atarax 5mg IV TID
3. Calasoft Lotion (for external application)
4. Tab. Allegra 120mg PO BD

From day 8<sup>th</sup> (6/10/2016) to day 12<sup>th</sup> (10/10/2016), Patient had no fresh complaints and stable vitals and healing of rashes were observed.

On day 13 (13/10/2016), patient was fit to discharge and was discharged with the following medicines and was advised to revisit after 10 days to the General medicine OPD.

1. Tab. Atarax 25mg BD for 5 days
2. Calasoft lotion apply 2 times daily
3. Cap. Neurodin (Mecobalamin 750mcg + Pregabalin 75mg) 1cap OD for 10 days

## DISCUSSION

Drug induced Anaphylactic reaction is the major health concern associated with systemic medications and the incidence of fatalities [6,7]. Identification of the offending agent and taking proper step to manage the condition plays crucial role in patient care. Moxifloxacin which has increased side effects in combination with any non-steroidal anti-inflammatory drugs should be used with caution<sup>8</sup>. Anaphylactic reactions may further complicate to develop urticaria, angioedema involving other body systems and finally leading to shock and death<sup>1</sup> hence aggressive preventive measure should initiate to prevent further complications. Primary treatment involves discontinuing the causative agent and managing with the systemic antihistamines, topical corticosteroids and intra venous fluid replenisher<sup>1,5,6</sup>. Similar was found in this case, where first 6 days the patient was treated with selective antihistamine and a corticosteroid which is definite management therapy and foremost decreased the rashes and erythema. Finally patient was discharged with an Antihistamine and a topical antipruritic agent along with a multivitamin. This case emphasize on the appropriateness of management in drug induced anaphylactic reaction. Clinical pharmacists have a potential role in identifying this category of cases and reporting them in a suitable manner to share & create awareness among other healthcare professionals which may aid in better patient care.

## CONCLUSION

Drug induced anaphylactic reaction should be treated with

appropriate management strategy so that further complication and fatality can be avoided. This case shows a classical example of identification and management of anaphylactic reaction developed due to moxifloxacin. Reporting of such cases should also be encourage to create an awareness about such conditions.

## Informed Consent Form:

Informed consent form was obtained from the patient for the publication of the case. A copy of the informed consent form is available with the author for future proceeding.

## REFERENCES

1. A. Muraro G Roberts, M. Worm, M. B. Bilò, K. Brockow, M. Fernandez Rivas. Anaphylaxis; Guidelines from the European Academy of Allergy and Clinical Immunology. 2014; 69 (8): 1029-1045.
2. Natalia Blanca Lopez, Maria del Carmen Plaza-Seron, Jose Antonio Cornejo-Garcia, James Richard Perkins, Gabriela Canto, Miguel Blanca. Drug-Induced Anaphylaxis; Current Treatment Options in Allergy. 2015; 2 (3): 169-182.
3. F. Estelle R. Simons. Anaphylaxis; Journal of Allergy and Clinical Immunology. 2010; 125 (2): 161-182.
4. Boyce JA, Amal Assa'ad, Burks AW et al. Guidelines for the diagnosis and management of food allergy in the United States: Summary of the NSAID- sponsored expert panel report; Journal of Allergy and Clinical Immunology. 2010; 126 (6): 1106-1112.
5. Shipley D, Ormerod AD. Drug-Induced Urticaria; American Journal of Clinical Dermatology. 2001; 2 (3): 151-158.
6. McKenna JK, Leiferman KM. Dermatologic drug reactions; Immunology and Allergy Clinics of North America. 2005; 24: 399-423.
7. Lazon J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. 1998; 279 (15): 1200-1205.