Case Report

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ANAPHYLACTIC SHOCK CAUSED BY COMBINATION OF ARTEMETHER-LUMEFANTRINE: A CASE REPORT

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ABSTRACT

A 11 year old female patient was brought to casualty peadiactric ward with complaint of swelling lips, shortness of breath 30 minutes after ingestion of tablet artimither 40 mg and lumefantrine 240 mg in combination. On examination the pulse was feeble, pulse rate was 120/57 mmHg (MAP 73). She was conscious and oriented, there was vesicular breath sounds with prolonged expiration, ronchi were present. The patient was diagnosed as a case of anaphylactic shock and treated with Inj. Adrenaline 0.3 mg i.v., Inj. Hydrocortisone 100 mg i.v., Inj. Pheniramine 4.5 mg i.v. and intravenous fluids. Patient discharged after getting completely recovered.

INTRODUCTION

Malaria is one of the major public health problems in the world[1], caused by Plasmodium parasites. The parasite spreads through infected female Anopheles mosquitoe bite. There are five plasmodium species that cause malaria in human beings[2].The World Health Organization (WHO) recommends artemisinin-based combination (ACT) regimen for the treatment of uncomplicated *Plasmodium falciparum* malaria cases in endemic areas[2].

The combination of artemether with lumefantrine was developed in China and first evaluated in the 1960s. It was the first fixed-dose antimalarial drug combination of an artemisinin derivative with an unrelated co-substance, in terms of biochemical and pharmacological properties[3].Common adverse drug reactions which were reported during clinical trials and post marketing surveillance are nausea, vomiting, abdominal pain, anorexia, headache, dizziness, sleep disorder, palpitation, arthralgia, pruritus and rash[4].

A case of anaphylactic reaction to the combination of artemether and lumefantrine was reported by Adverse Drug Reaction Monitoring Centre (ADRMC), J. N. Medical College and Hospital, Aligarh Muslim University.

Case Study: An 11 year old female patient visited a private clinic with high grade fever, She was prescribed tablet Lumerax™ (combination of Artemether 40 mg and Lumefantrine 240 mg). Within 30 minutes of ingestion of Tab. Lumerax she was brought to the paediatrics emergency at J.N. Medical College, A.M.U., Aligarh with complaint of swelling of lips and shortness of breath. On examination, patient had feeble brachial pulse with heartrate of 140/min., respiratory rate of 56/min., blood pressure and 120/57 (MAP 73) mmHg, temperature 97.8°F, SpO2 91% with O_2 supplementation and SpO2 75% at room air. She was conscious and oriented. Respiratory system examination revealed vesicular breath sounds with prolonged expiration. Rhonchi were also heard all over the chest. On the basis of history and examination, she was diagnosed as a case of anaphylactic shock and treated for the same. Her investigations revealed SGOT 27 I.U./L, SGPT 29 I.U./L, total bilirubin 0.7 mg/100ml, malaria parasite was negative by QBC and RDT was non-reactive, BUN 11 mg/dL, serum creatinine 0.74 mg/dL, total WBC count $7.8\times10^3/\mu L$, RBC count $4.39\times10^6/\mu L$, hemoglobin 11.9 g/dL, MCV 88.4 fL, platelet count $129\times10^3/\mu L$, pH 7.41, pCO_2 28 mmHg, pO_2 45 mmHg, Na^+ 144 nmol/L, K^+ 3.0 nmol/L, Ca^{2+} 0.69 nmol/L and Glucose (random) 83 mg/dL. Lumerax was then discontinued after single dose and patient was given Inj. Adrenaline 0.3 mg i.v., Inj. Hydrocortisone 100 mg i.v., Inj. Pheniramine 4.5 mg i.v. and intravenous fluids. She improved on this treatment and was discharged in a satisfactory condition.

The case was registered in Vigiflow (WHO-UMC) software under worldwide unique number IN-IPC-2017-62585, AMC

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Report No. JNMCH/Nov-2017/19. The causality assessment of this case was possible as per the WHO-UMC causality assessment scale.

DISCUSSION

Anaphylaxis is a severe, multisystem allergic reaction that occurs suddenly after contact with an allergen. The classic presentation includes urticaria or angioedema, hypotension, and bronchospasm[5]. Several cases of anaphylactic shock induced by drugshave been reported. The patient reported swelling of lips and clinical evidence of bronchospasm along with shock confirming the diagnosis of anaphylaxis. Since no other drug was taken and there was no other incriminating factor, this anaphylaxis was attributed to the use of Artemether-lumefantrine combination. The case report is the first one with the use of Artemether and Lumefantrine in combination, even though it has been used extensively in almost all age groups to treat malaria patients across the world. Vigiaccess status of this case is 1, means only one suspected adverse reaction is reported to the WHO Programme for International Drug Monitoring (WHO PIDM) till now.[6]

CONCLUSION

It was an unlisted case of life-threatening anaphylactic shock associated with Artemether and Lumefantrine in combination. The causality assessment supported possiblediagnosis. This case report further emphasizes the need for continous ADR monitoring and reporting for healthcare professionals and vigilance on Artemether and Lumefantrine in combination therapy to avoid such life-threatening events. It is also imperative that we avoid presumptive treatment of malaria, as also recommended by WHO in its malaria treatment guidelines[7].

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