CASE REPORT

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A CASE REPORT OF SUSPECTED ANGIOEDEMA IN A CHILD AFTER ADMINISTRATION OF MEBENDAZOLE, COTRIMOXAZOLE AND LEAF EXTRACTS

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ABSTRACT

Adverse drug reactions in children are an important public health problem. Children are at a higher risk of developing adverse drug reactions as they seldom express their own drug therapy experiences. Factors that have been implicated include polypharmacy especially with anti-infective and non-steroidal anti-inflammatory drugs; also concomitant use of traditional medicines which is prevalent in some cultures. Cutaneous drug allergy is a common manifestation of adverse drug reactions.

Keywords: Angioedema, Mebendazole, Co-trimoxazole, Leaf extracts

INTRODUCTION

An adverse drug reaction is defined by the World Health Organisation (WHO) as a response to a medicine which is noxious and unintended and which occurs at doses normally used in man.[1] Cutaneous adverse drug reactions (CADRs) are a most commonly reported type of adverse drug reaction (ADR).[2] There is limited information about ADRs in children from developing countries especially from sub Saharan Africa.[3,4] Angioedema, first described in 1586,[5] is usually defined by pronounced swelling of the deep dermis, subcutaneous or submucosal tissue, or mucous membranes as a result of vascular leakage.[6] Other terms, such as giant urticaria,[7] Quincke edema,[8] and angioneurotic edema,[9] have also been used in the past to describe this condition. Clinically, it is usually non-pitting and non-pruritic. Involved skin often shows no change in colour or may be slightly erythematous. It is most commonly observed affecting the lips and eyes (periorbital). Other commonly involved areas include the face, hands, feet, and genitalia. Angioedema is classified as either hereditary or acquired. Acquired angioedema can be immunologic, non-immunologic, or idiopathic.[10] Allergic angioedema is the commonest type. Drugs that have been reported as being involved in ADRs include: antibiotics,[11,12] non-steroidal anti-inflammatory drugs.[13,14] We report a case of angioedema following administration of mebendazole, cotrimoxazole and leaf extracts.

CASE REPORT

A 12 year old boy who presented at the Paediatric Nephrology Clinic with a day history of periorbital swelling, skin rash, pruritus and low grade fever. A day prior to the onset of these symptoms, he had been given mebendazole tablets as anti-helminthic – 300mg in the morning and in the evening. The following morning, he was noticed to have peri-orbital swelling and subsequently facial swelling. He was also noticed to have pruritic rash about the same time. This involved the face, trunk and upper limbs. The upper part of the child's body was also noticed to have been bigger than normal. There was no preceding insect bite, ingestion of a new type of food or contact with latex. There was also no family history of such ailment. This was the first episode of body swelling and first episode of Mebendazole intake. He had been given oral cotrimoxazole, vitamin c and bitter leaf extracts before presentation in the hospital.

Physical examination revealed that he had peri-orbital oedema with sub-mental fullness and papular skin rash involving the face, trunk and upper limbs. He was not dyspnoeic and had respiratory rate of 16/minute. His pulses were of normal volume and his heart rate and blood pressure were 80/min and 100/60mmHg respectively. The heart sounds were heart sounds 1 and 2, and were normal. He did not have any other significant abnormalities in other systems. Investigations done included urinalysis, blood electrolytes and urea, full blood count, and fasting lipids profile. All these were within normal ranges.

A diagnosis of Angioneurotic Oedema was made. Other differential diagnosis considered were Acute Glomerulonephritis and Nephrotic syndrome. He was placed on steroids – Oral Prednisolone 60mg daily for 3 days. By the second day on admission, oedema was regressing and by the 3rd day it had resolved

completely as well as the rash. The parents pressed for discharge and were allowed home on the 4th day on admission. He was lost to follow up.

DISCUSSION

Mebendazole is synthetic broad spectrum anti-helminthic which through microtubular destruction kills helminths by inhibiting glucose uptake into susceptible parasites.[15] The dose is 100mg twice daily for three consecutive days.[16] Common side effects include: nausea, vomiting while rare side effects include: rash, alopecia, urticaria and angioedema. Adverse effects appear to occur more frequently when higher doses are used.[17]

A compiled information from Food and Drug administration (FDA) and Facts Med users submissions between January 2004 and October 2012 showed that two individuals taking mebendazole reported angio-edema to the FDA while a total of 152 mebendazole drug adverse event reaction reports were made with the FDA during this time period.[18]

Trimethoprim/Sulfamethoxazole (TMP/SMX) also known as co-trimoxazole is an antibiotic used for urinary tract infections, MRSA skin infections, travelers' diarrhoea, respiratory tract infections and cholera among others.[19] It works by stopping the metabolism of folate. Due to it's high incidence of adverse effects, including allergic responses, its use has been restricted in many countries to very specific circumstances where its improved efficacy has been demonstrated.[20]

A clinical study of cutaneous drug eruptions in 200 patients in India aged between 1 year to 80 years in the year 2008 revealed that co-trimoxazole was the most common cause of drug eruptions.[21]

Traditional medications are used mostly in cases of fever, convulsion and rashes in children just to mention a few. There is paucity of studies on children who developed adverse drug reactions following its use. In a retrospective audit of reports of ADRs received by the pharmacovigilance unit (PV) in children aged less than 18 years in the Ahmadu Bello University Teaching Hospital, Zaria (ABUTH) from 2008 to 2012, only 2 children were documented to have had ADRs following traditional medicine use.[22]

Understanding the various possible causes is the first step in assessing angioedema. Allergic and drug – induced angioedema responds to removal of cause.[23] Investigations that can be done in the case of angioedema include: Complete blood count, electrolytes, renal function and liver enzymes. Also mast cell tryptase levels may be elevated if the attack was due to acute allergy (anaphylactic reaction).

The immediate management of systemic reaction focuses on the treatment of anaphylaxis, for which administration of subcutaneous epinephrine (0.3ml of a 1:1,000 dilution) is the treatment of choice.[24,25] An antihistamine, such as diphenhydramine (Benadryl) or hydroxyzine (Atarax, Vistaryl) may be given after epinephrine has been administered to reduce pruritus and inflammation.[25] When the conventional H1 and H2 antihistamines failed, other drugs like Nifedipine is used as an adjunct to antihistamines. Some authors suggest the use of corticosteroids depending on clinical presentation[24] while others mention corticosteroid therapy using intravenous dexamethasone sodium phosphate or hydrocortisone which remains the main treatment for angioedema.

CONCLUSION

Adverse drug reactions are global problems affecting children in both developing and developed countries. A higher level of clinical suspicion and vigilance, good knowledge of the predisposing factors, and proper monitoring of at-risk drugs in at-risk patients may help prevent ADRs thus reducing its global incidence.

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