Occurrence of fixed Drug Eruptions in a Tertiary Care Hospital: Case Reports

Vijayakumar S[1]*, RamChandra D, Narmadha R[2]

[1] Associate Professor & Head, Department of Pharmacy Practice, MGM Hospital, Vaagdevi College of Pharmacy, Warangal, A.P

[2] Professor and Head, Department of Dermatology, Dr. NTR University of Health Sciences, KMC/MGM Hospital, Warangal, A.P.

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ABSTRACT

Fixed drug eruption (FDE) is a unique pattern of cutaneous drug reaction, characterized by skin lesions that recur at the same site or sites each time the drug is administered. Acute lesions appear as round or oval, sharply marginated, erythmateous plaques that sometimes develop central bullae. They are generally under reported with different rates in different health care systems. The present case studies were carried out in the department of dermatology in a multidisciplinary tertiary care government hospital for one month from June 12th to July 12th, 2011 by the Department of Pharmacy Practice. The cases were recorded and subjected to descriptive analysis. We observed four cases with FDE possibly induced by Isoniazid, Diclofenac, Primaquine, Ciprofloxacin and Carbamazepine. Clinical patterns and drug causing cutaneous ADRs are similar to other researchers. The case studies highlighted that above medications belongs to the group of drugs that can induce fixed drug eruption.

Keywords: Fixed Drug Eruptions, Skin rashes, Pruritus, and Hypersensitivity

INTRODUCTION

Fixed drug eruption (FDE) is a unique pattern of cutaneous drug reaction, characterized by skin lesions that recur at the same site or sites each time the drug is administered. Acute lesions appear as round or oval, sharply marginated erythmateous plaques that sometimes develop central bullae .The lesions are usually found on the lips and genitalia, although any skin or mucosal surface may be involved.[1,2] The eruption usually occurs within hours of administration of the offending agent and resolves spontaneously without scarring after few weeks of onset, usually with residual post inflammatory pigmentation. The most frequently implicated drugs are sulphonamides, tetracycline, salicylates and barbiturates.[3] It is of utmost importance to recognize drugs that induce these severe reactions and to identify the early symptoms signalling such a reaction, because prompt withdrawal might decrease mortality.[4] The present case studies were carried out in the department of dermatology in a multidisciplinary tertiary care government hospital for one month from June 12th to July 12th, 2011 by the Department of Pharmacy Practice.

Address for Correspondence:

Subash Vijaya Kumar,Associate Professor & Head, Department of Pharmacy Practice, MGM Hospital, Vaagdevi College of Pharmacy, Warangal, Andhra Pradesh,India.

E-mail : vijayvijay66@yahoo.co.in

CASE REPORT 1

A 25-year-old woman was admitted to the hospital complaining of skin rashes. The patient was a known case of epilepsy disorder for which medications (CBZ 200mg) were being used. Unfortunately, she noticed to develop skin rashes in lower and upper extremities as shown in the figure 1. The rash was associated with round lesions with blisters in thigh and lumbar region. The patient was found to be suffering with low grade fever. The laboratory investigations showed: Haemoglobin 9 g/dL, platelet count 120,000/cmm, and WBC 4,000/cmm. Neutrophil 62%, lymphocyte 14%, and serum electrolytes-normal, serum creatinine 165 µmol/L, serum albumin 2 g/dL; serum calcium and serum magnesium were normal. Urine culture showed no growth. Reticulocyte count was 12%. After admission in the hospital CBZ 200 mg BD was replaced by prescribing phenytoin 150mg OD, (cause for FDE) in addition to it, hydrocortisone 75mg/topical TID, chlorpheniramine maleate 5mg/OD/bed time, paracetamol 500mg/TID and emollient cream were prescribed. I.V fluids were given as a supportive therapy. After 3weeks of the treatment, skin lesions started fading, patient's general well-being was improved with no fever, relief of body pain. She was discharged on medication and asked to consult the physician regularly till she becomes normal without any manifestations of FDE.

CASE REPORT 2

A 33-year-old woman presented with malaria and erythematous rashes over the face as shown in figure 2. She had experienced sore throat, and skin lesions appeared on cheeks and nose. The preceding day, she had been diagnosed with high fever and body pain and was administered with IV diclofenac 50 mg BD and Primaquine 15mg/day. She did not take any other medication, or nutritional supplement before being treated with antimalarial drug. On repeated 3days of administration of primaquine, she developed erythematous macules with darker purpuric centers over which flaccid blisters and a sheet-like epidermal detachment had developed, especially on her face and nose regions. Because a severe form of drug eruption was strongly suspected, the patient was hospitalized on the same day. After admission, the erythema and blisters further increased and extended rapidly over the whole body, involving >20% of the body surface area, allowing definitive diagnosis of FDE. The center of each erythema became dark red in color, followed by blister formation. The patient's temperature was high, but other vital signs were stable. Laboratory findings were normal upon admission, except for elevated erythrocyte sedimentation rate (ESR) (48 mm/h; reference range 0–15), Urine, blood, and throat cultures were negative. Electrocardiogram, abdomen ultrasonographic examination, and chest X-rays were normal. Oral prednisolone 60 mg daily, arsenuate 100 mg BD and supportive topical therapy were given. Ringer's lactate infusion of 2000 mL/day, parenteral nutrition were also started. During the first week of the therapy, few new lesions continued to appear. The signs and symptoms of FDE progressively resolved in 10 days, after which prednisolone dose was gradually tapered to discontinuation. Following discharge, there was no recurrence of the symptoms, and the skin lesions healed without any scars.

CASE REPORT 3

A 40 year old woman was admitted to the hospital with skin rashes all over the body ruptured leaving raw area like erosion and ulceration as depicted in figure 3. Patient was a known case of tuberculosis and had suffered with cough and fever for 7 days and she was administered with anti-tuberculosis drug and paracetamol 500mg (OTC drugs) for 7 days. Upon investigation, the patient's condition was confirmed to be isoniazid induced fixed drug eruption. Laboratory investigations revealed elevated WBC count and ESR. The patient's condition improved with antihistamine drugs, systemic steroids and supportive medications.

CASE REPORT 4

A severe form of eruptions over the trunk with pigmented lesions and rashes was presented in a female patient of age 21 years as shown in the figure 4, who was regularly on anti-tubercular drugs for one month, prescribed by a pulmonologist. Her laboratory results showed: RBC 3.4K/cmm, Hb 10g/dl, HCT 32%, erythrocyte sedimentation rate (ESR) 11 mm/hour. She was admitted to the hospital and treated with hydrocortisone 75mg/topical TID, chlorpheniramine maleate 5mg/OD/bed time, and IV fluids were given as supportive therapy. An extensive literature search revealed few earlier reports of Isoniazid induced FDE.

DISCUSSION

ADRs are a threat to patient's health and quality of life, and they can cause significant affect to the healthcare systems in developing and developed countries. Recently, the incidence of ADRs has increased significantly and the importance of this phenomenon will obviously vary in different healthcare system.[6,7] The present study examined ADRs in the department of dermatology in a tertiary care government hospital which is attached to medical college. FDE is characterised by sudden onset of round and/or oval, oedematous dusty-red macules and plaques on the skin and/or itching and the re-appearance of the lesions over the previously affected area when the offending agent is reused.[8,9] Histologically, there is basal hydropic degeneration, pigmentary incontinence, upper epidermal keratinocyte necrosis, dermal oedema, vasodilatation and perivascular inflammatory cells (lymphocytes, neutrophils, histocytes, mast cells).[10-14] The observations of the present study implicated Primaquine, Isoniazid, Carbamezepine and NSAIDS. As FDE are sometimes confused with multiple venereal diseases, it is of utmost importance for all the medical specialists to identify FDE clinically by doing the provocation test so that these cases are not missed.[15] Eariler studies reported that fixed drug eruptions seen, mostly due to NSAIDS,[16] Co-trimoxazole,[17] Cephalosporin, Carbamazepine and oral amoxicillin.[18] In our present study, we found isoniazid induced fixed drug eruption. Our results were similar with the study conducted by Noel M.V, et al[19] who reported that drugs such as anti-epileptics mainly phenytoin and carbamazepine were responsible for the majority (44%) of the ADRs which strengthens our study findings in case of carbamazepine.

Fig.1: Erythematous round lesions of reddish, featuring blisters on thigh and back

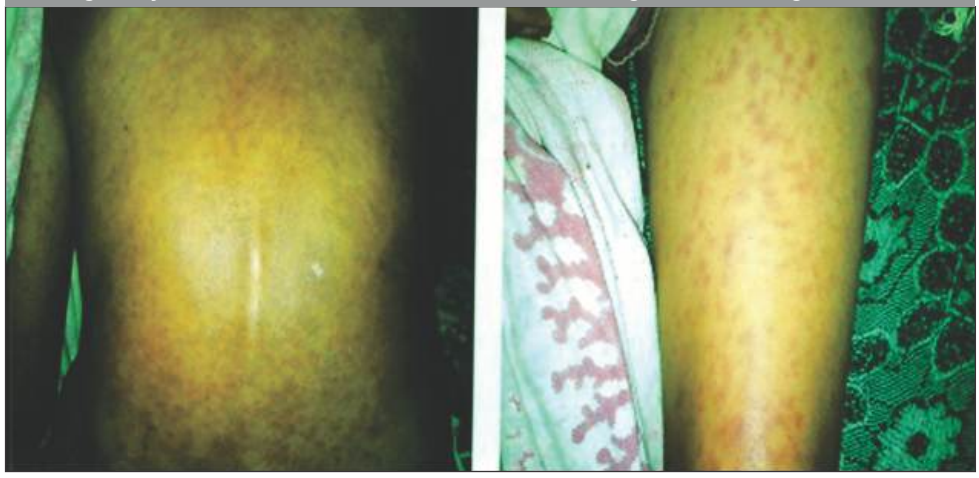


Fig.2: Round, black lesion on hand

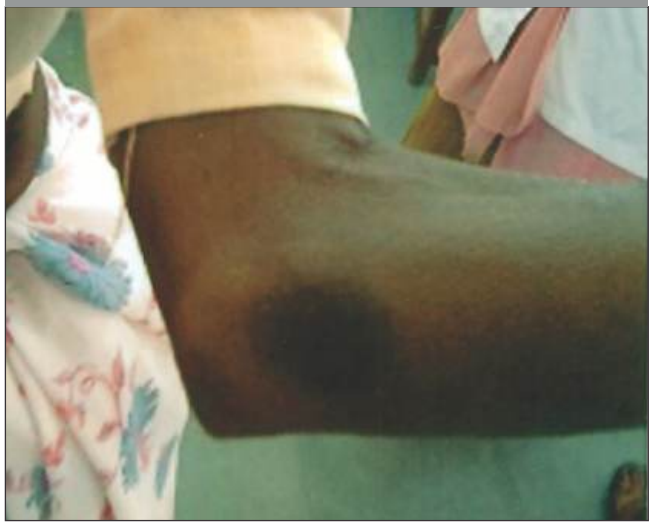


Fig.3: erosion and ulceration

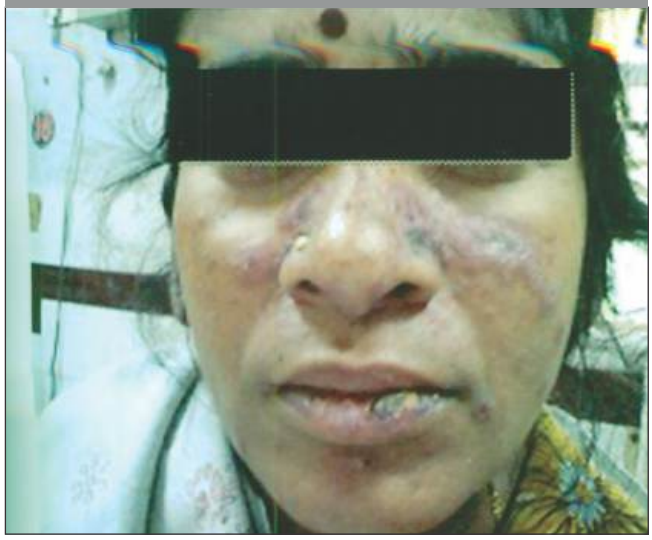
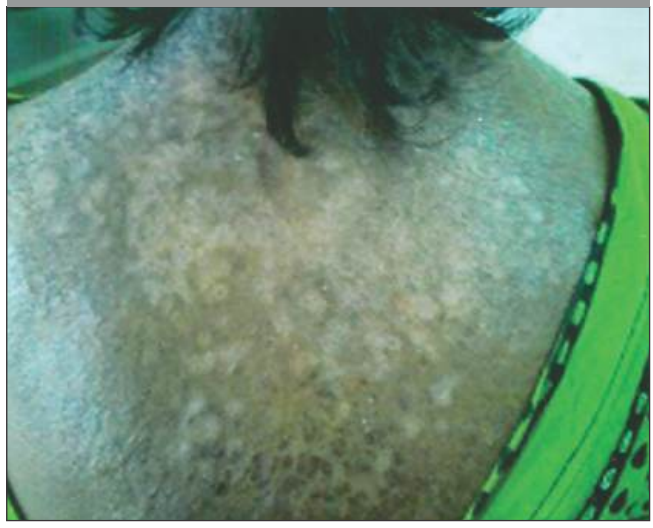


Fig.4: Pigmented lesions over the trunk



CONCLUSION

It can be concluded that the clinical patterns and the drugs causing fixed drug eruptions are remarkably similar to those observed in other countries except with minor variations.

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