

Clinical profile of cutaneous drug reactions

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Abstract *Objective* To find out the clinical profile of cutaneous drug reactions in a tertiary level hospital.

Methods In this cross-sectional study, carried out for a period from January 2011 to December 2011, data were collected from the Department of Dermatology and Venereology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh. Patients suffering from adverse drug reactions were the study population and within the period of data collection, twenty patients were selected.

Results Out of total twenty patients, 9 (45%) had fixed drug eruptions, 4 (20%) urticaria, 3 (15%) Stevens-Johnson syndrome, 2 (10%) morbilliform rashes and 2 (10%) had erythema multiforme. The most common clinical presentation was hyperpigmented macule/patch in 5 (25%) cases, followed by urticarial plaque 4 (20%), erosive lesion 3 (15%) and loss of skin in sheets <10% body surface area 3 (15%) and morbilliform rashes and target lesions in 2(10%) each. 6 (30%) patients developed mucosal involvement only and majority of them 8 (40%) had oral involvement. The most common type of offending drug causing the drug reactions were sulfur containing drugs in 8 (40%) cases, followed by NSAIDs in 6 (30%), quinolones 3 (15%), metronidazole and anticonvulsants in a few.

Conclusion The common types of cutaneous drug eruptions are fixed drug eruptions, urticaria, Stevens-Johnson syndrome, morbilliform rashes and erythema multiforme.

Key words

Clinical profile, adverse drug reactions.

Introduction

Drug reactions are a common cause of dermatologic consultation. The majority of cutaneous drug reactions are exanthematous (75%-95%) and urticarial (5%-6%).^{1,2} Drug reactions are a major cause of patient morbidity and account for a significant number of patient deaths. Drug reactions may be solely limited to

the skin or they may be part of a systemic reaction, such as drug hypersensitivity syndrome or toxic epidermal necrolysis.³ Cutaneous drug reactions have become very common in recent times. The incidence of cutaneous drug reactions is about 2.2%.⁴ Although majority of adverse drug reactions are minor and are self-limiting, sometimes severe and potentially life threatening situations like Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) can arise, which constitute from 2.6% to 7% of all drug reactions. The prevalence of cutaneous drug reactions varies from 15 to 30%.⁵

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Cutaneous drug reactions can be caused by a wide variety of agents. Many of the commonly used drugs have reaction rates above one percent.⁶ TEN is the most serious of the cutaneous drug reactions. The onset is usually acute and epidermal necrosis involves >30% of body surface area. It can be distinguished from SJS, where the total surface of body surface area detachment is <10%, by definition.⁷ A morbilliform rash is the most common reaction to phenytoin, occurring in as many as 5% of cases overall. However, a wide variety of cutaneous reactions can occur, including fixed drug eruptions, exfoliative dermatitis, erythema multiforme, SJS, vasculitis, acneiform lesions and lupus-like reaction.

The drugs capable of producing fixed eruptions are tetracyclines, sulphonamides (including cotrimoxazole), barbiturates, hyoscine butylbromide, ibuprofen, dapsone, phenolphthalein, quinine and derivatives, paracetamol, benzodiazepines. Erythema multiforme is more commonly precipitated by various interactions, and clinically, macular, papular, or urticarial lesions, as well as, the classical iris or 'target lesions', on the distal extremities.⁸ Complicating factors of drug reactions include the myriad clinical symptoms and multiple mechanisms of drug-host interaction, many of which are poorly understood. In addition, the relative paucity of laboratory testing that is available for drug allergy makes the diagnosis dependent on clinical findings.¹ In future, this study deserves to be tried on a large scale with large sample size and in different hospitals in Bangladesh. Information obtained from this study may help in recognizing the magnitude of the disease problem and to take necessary measures to prevent drug reaction.

Methods

It was a cross-sectional study, data were collected from the department of Dermatology and Venereology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka. The study was carried out for a period from January 2011 to December 2011. Patient suffering from adverse drug reaction were selected as study population. Within the period of data collection, twenty patients were assigned and consecutive type non-probability sampling techniques were followed in this study. By face to face interview and also from clinical record data were collected from patient. The patient was identified at first. Information was collected by taking medical history and clinical examination and subsequent laboratory investigations. Then clinical conditions of the patient were recorded by the author and skin biopsy was done for histopathological examination. Exclusion criteria included patients unwilling to give informed consent, pregnant and lactating women and patient with severe uncontrolled diabetes mellitus and thyroid disease. Conversely, all patients who had given written consent, both sexes and from birth to 65 years old ages were included in the study.

Results

Table 1 shows the demographic data and the clinical characteristics of the 20 patients. Out of total 20, 9 (45%) had fixed drug eruptions, 4 (20%) had urticaria, 2 (10%) had morbilliform rashes, 2 (10%) erythema multiforme, and SJS developed in 3 (15%) cases (**Table 2**).

The most common clinical presentation was hyperpigmented macules/patches in 5 (25%) cases, followed by, urticarial plaques in 4 (20%), erosive lesion and loss of skin in sheets (<10%) in 3 (15%) and 2 (10%) cases each had

Table 1 Demographic and clinical characteristics of patients (n=20).

Characteristics	N (%)
Age (years)	
≤10	2 (10)
11-20	4 (20)
21-30	8 (40)
31-40	4 (20)
>41	2 (10)
Sex	
Male	14 (70)
Female	6 (30)
Skin involvement	14 (70)
Mucosal involvement	6 (30)

Table 2 Distribution of patients by common drug reactions (n=20).

Common drug reactions	N (%)
Fixed drug eruption	9 (45)
Urticaria/Angioedema	4 (20)
Stevens-Johnson syndrome	3 (15)
Erythema Multiforme	2 (10)

Table 3 Distribution of the patients by clinical presentation (n=20).

Clinical presentation	N (%)
Hyperpigmented macule/patch	5 (25)
Urticarial wheal	4 (20)
Erosive	3 (15)
Loss of skin in sheets (<10%)	3 (15)
Morbilliform	2 (10)
Target lesion	2 (10)
Loss of skin in sheets (>30%)	1 (5)

Table 4 Drugs implicated in the etiology (n=20).

Clinical presentation	N (%)
Sulfonamides	8 (40)
NSAIDs	6 (30)
Quinolones	3 (15)
Metronidazole	2 (10)
Anticonvulsants	1 (5)

morbilliform rashes and target lesions (**Table 3**). 6 (30%) patients developed mucosal lesions. Oral involvement was seen in 4 (66%) cases, ocular and genital mucosal involvement was seen 1 (17%) patient each. The most common offending drugs causing the drug reactions were sulfonamides in 8 (40%) cases, followed by NSAIDs in 6 (30%), quinolones in 3 (15%),

metronidazole in 2 (10%) cases and anticonvulsants in 1 (5%) case (**Table 4**).

Discussion

Out of 20 patients in the study, 8 (40%) cases were within 21-30 years age group, followed by 4 (20%) each of the 11-20 years age group and 31-40 years age group. This differed from the study findings of Patel *et al.*⁹ where maximum age group was between 41-50 years old among the 200 patients of adverse drug reaction. The study had similarity with Sharma *et al.*¹⁰ where 50.4% were in the age group of 21-40 years among the 500 patients of adverse drug reactions in Chandigarh, India. Among our patients, 14 (70%) were male and 6 (30%) were female, similar to the study finding of Patel *et al.*⁹ where 112 were males and 88 were females. Similar finding was also observed by Sharma *et al.*¹⁰ where 298 (59.6%) were males and 202 (40.4%) were females.

In our study, fixed eruption was the most common morphological type. Similar finding was seen by study of Patel *et al.*⁹ where 61 (30.5%) had fixed drug eruptions, 37 (18%) developed morbilliform eruption, 39 (18.5%) of urticaria, 25 (12.5%) pruritus, Stevens-Johnson syndrome (n=7), erythema multiforme (n=2) and toxic epidermal necrolysis (n=2).⁹ The study by Ghosh *et al.*¹¹ reported that majority of adverse reactions were SJS, erythema multiforme and urticaria among the 53 patients of adverse drug reactions. The study by Sharma *et al.*¹⁰ also observed that maculopapular rash in 34.6%, fixed drug eruptions in 30% and urticaria in 14% among 500 patients of adverse drug reactions in Chandigarh, India.

The most common type of offending drugs causing the drug reactions are sulfonamides in 8 (40%) cases, followed by NSAIDs in 6 (30%),

quinolones 3 (15%), metronidazole in 2 (10%) cases and anticonvulsants in 1(5%) case, similar to the study finding of Patel *et al.*⁹ where majority of causative drugs in fixed drug reaction were co-trimoxazole 26 (29.5%) and NSAIDs 20 (22.8%) in number. NSAIDs were also the main offenders in causing urticaria, angioedema and morbilliform rash. Photosensitivity was seen mainly due to ciprofloxacin and sparfloxacin in four cases. Five cases of exfoliative dermatitis (2.5%) occurring due to carbamazepine (two), ibuprofen and NSAIDs and dapsone were seen. There were four cases of purpura, the offending drugs being aspirin, chloroquine, griseofulvin and an unknown drug. One case of angular cheilitis was due to isotretinoin.⁹ Ghosh *et al.*¹¹ reported that the majority of adverse drug reactions were due to antibiotics 16 (30%), anticonvulsants 13 (25%), antitubercular drugs 6 (11%), antipyretics 5 (9%) and ayurvedic 2 (4%). Sharma *et al.*¹⁰ observed that adverse drug reactions were due to antimicrobials 42.6%, anticonvulsants 22.2% and NSAIDs 18% among the 500 patients of adverse drug reactions. Among the 14% cases of urticaria, 24.3% were due to NSAIDs and 20% were due to penicillin.

Conclusion

Although some cutaneous drug reactions are self-limiting but some are dangerous enough, even may lead to death if not diagnosed early and not promptly and efficiently treated. Hence, each of these cutaneous reactions should be considered with great importance.

References

1. Marc A, Riedl MD, Adrian M, Casillas MD. Adverse drug reactions: types and treatment options. *Am Fam Physician*. 2003;**68**:1781-91.
2. James WD, Berger TG, Elston D. *Andrew's Disease of the Skin-Clinical Dermatology*. 10th edition. Philadelphia: Saunders Elsevier; 2006.
3. Shear NH, Knowles SR, Shapiro L. Cutaneous reactions to drugs. In: Wolff K, Goldsmith LA Katz SI *et al.*, editors. *Fitzpatrick's Dermatology in General Medicine*. 8th edition. New York: McGraw-Hill Companies; 2003. P.355-61.
4. Ahmad FU, Mahapatra AK. Phenytoin-induced toxic epidermal necrolysis in a neurosurgical patient. *Neurol India*. 2007;**55**:181-2.
5. Jhaj R, Uppal R, Malhotra S, Bhargava VK. Cutaneous adverse reactions in-patients in a tertiary care hospital. *Indian J Dermatol Venereol Leprol*. 1999;**65**:14-7.
6. Shrivastava D, Kumar A, Singh SK. Adverse drug reaction monitoring in patients attending skin O.P.D at a teaching hospital. *Indian J Pharmacol*. 2004;**36**:S42.
7. Devi K, George S, Criton S *et al.* Carbamazepine - the commonest cause of toxic epidermal necrolysis and Steven Johnson syndrome: A study of 7 years. *Indian J Dermatol Venereol Leprol*. 2005;**71**:325-8.
8. Sehgal S, Balachandran C, Shenoj SD. Clinical study of cutaneous drug reaction in 80 patients. *Indian J Dermatol Venereol Leprol*. 2003;**69**:6-7.
9. Patel RM, Marfatia YS. Clinical study of cutaneous drug reaction in 200 patients. *Indian J Dermatol Venereol Leprol*. 2008;**74**:430.
10. Sharma VK, Sethuraman G, Kumar B. Cutaneous adverse drug reactions: Clinical pattern and causative agents- a 6 year series from Chandigarh, India. *J Postgrad Med*. 2001;**47**:95-9.
11. Ghosh S, Acharya LD, Rao PGM. Study and evaluation of the various cutaneous adverse drug reactions in Kasturba hospital, Manipal. *Indian J Pharm Sci*. 2006;**68**:212-5.