Original Research Article

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A study of cutaneous morphological patterns of adverse drug reactions in tertiary care center, Chitradurga, Karnataka, India

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ABSTRACT

Background: An adverse cutaneous drug reaction is an undesirable change in structure and function of skin, its appendages or mucous membrane due to drugs. The main aim of this study is to detect the pattern of adverse cutaneous drug reaction in a tertiary care hospital of Chitradurga district, Karnataka, India.

Methods: A Hospital based cross sectional study was performed in a tertiary care hospital, Chitradurga for 6 months from January 2019 to June 2019. For each case, data regarding age, sex of the patient, clinical history, past history and comorbidities, name of suspected drugs, duration between drug intake and onset of reaction, morphology of drug eruption, associated mucosal or systemic involvement were analyzed.

Results: During the 8 months study period, 30 patients have attended the dermatology outpatient department with cutaneous adverse drug reaction. Majority of the patients were in the age group 20-39 years and the male to female ratio was 1.1:1. The commonest drug reaction pattern observed was the maculopapular rash (40%), urticaria (20%), fixed drug eruption (5%), Stevens Johnson syndrome (10%), toxic epidermal necrolysis (6.7%) and exfoliative dermatitis (6.7%). Commonest drugs producing reactions were diclofenac (30%), amoxycillin (23.3%), carbamazepine (20%), anti-tubercular drugs (16.7%), phenytoin (6.7%) and dapsone (3.3%).

Conclusions: Knowledge of the pattern and the offending drug helps in better management and reduced complications in these patients and also help in preventing recurrences.

Keywords: Cutaneous adverse drug reaction, Stevens Johnson syndrome, Toxic epidermal necrolysis

INTRODUCTION

An adverse cutaneous drug reaction is an undesirable change in structure and function of skin, its appendages or mucous membrane due to drugs.¹ The overall incidence of cutaneous adverse drug reactions (CADRs) in developed countries as 1-3%, while the incidence in developing countries is thought to be higher between 2% and 5%.² A cutaneous adverse drug reaction is termed severe if it is life threatening either in the form of death or if it requires prolonged hospital stay or resulting in disability.³ Clinicians come across many instances of

suspected CADRs in their day to day practice. Therefore, not only the dermatologist, but the practicing physician should have a knowledge with these reactions to enable early diagnosis and prompt withdrawal of the causative drug and prevent mortality from severe reactions.⁴ The objective of this study is to ascertain the clinical spectrum of CADRs and the causative drugs in a tertiary care centre of Chitradurga district, Karnataka, India.

METHODS

The present study is a cross-sectional study, carried out in the department of Dermatology, Venereology and Leprosy at Basaveshwara Medical College and Hospital, Chitradurga, Karnataka during a period of 6 months from January 2019 to June 2019. All patients attending the dermatology out-patient and in-patient department with active and extensive lesions of cutaneous adverse drug reactions due to systemic drugs were included in the study. Patients who developed CADRs following intake of homeopathy, ayurveda and indigenous medicines were excluded from the study.

Thorough clinical history of all the patients was taken and recorded according to preformed proforma. For each case, data regarding age, sex of the patient, clinical history, past history and comorbidities, name of suspected drugs, duration between drug intake and onset of reaction, morphology of drug eruption, associated mucosal or systemic involvement was noted. A different type of drug reactions manifested in the study population was studied and the offending drugs were noted. Final diagnosis was made after excluding other possible causes of similar clinical picture.

Patients with severe reactions were hospitalized. Appropriate specific treatment was given to each patient and alternative drug were prescribed after consultation from other departments. All patients were counselled and educated to avoid self-administration of the offending drugs. Each patient was given a list of drugs to be avoided in future. The patients were followed up regularly after treatment.

Statistical analysis

All the observations were entered in Microsoft excel sheet and data was analysed in SPSS version 20 software. categorical data was represented in frequencies and percentage, and suitable statistical tests were applied.

RESULTS

A total of 30 patients of adverse cutaneous drug reactions were studied. The mean age of patient was 57 years with most common age group being 20-39 years (60%) in which 16 (53%) were males and 14 (47%) were females (Table 1).

Table 1: Age and sex wise distribution of patients (n=30).

Variables	Frequency (%)
Age (in years)	
0-19	03 (10)
20-39	18 (60)
40-59	08 (27)
60-79	01 (3)
Gender	
Male	16 (53)

Female 14 (47)

Out of 30 patients, 07 patients required hospitalization. Of these 07 there were 3 patients with SJS, 2 patients with TEN, 2 patients with exfoliative dermatitis. The commonest reaction pattern observed was maculopapular rash (40%) followed by urticaria (20%) followed by bullous fixed drug eruption (16.8%), Stevens-Johnson syndrome (10%), toxic epidermal necrolysis (6.6%) and exfoliative dermatitis (6.6%) (Figure 1).

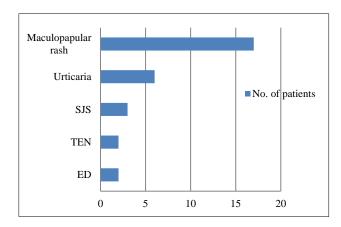


Figure 1: Distribution of morphological patterns of cutaneous adverse drug reactions among 30 patients.

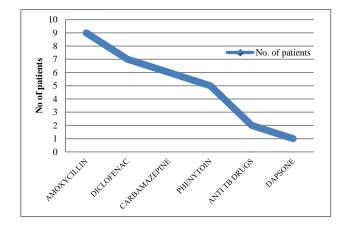


Figure 2: Drugs causing ADR.

Commonest drugs producing reactions were amoxicillin (30%), diclofenac (23.3%), carbamazepine (20%), phenytoin (16.7%), anti-tuberculosis drugs (6.7%) and dapsone (3.3%) (Figure 2). With nonsteroidal anti-inflammatory drugs and antibiotics, the usual time interval observed between drug intake and the onset of CADRs was 1 to 2 days, whereas anticonvulsants produce reactions between 1 to 15 days. Most of this study patients had 1% to 10% (23 out of 30) body surface area involvement, 3 patients had 10 to 30%, 2 patients had 30% to 90% and 2 patients had >90% involvement. Comorbidities noted in this study were diabetes mellitus (2 patients), hypertension (3 patients), pulmonary tuberculosis (2 patients) and coronary artery disease (1 patient).

DISCUSSION

Adverse cutaneous drug eruptions have various morphology and distribution. In the present study it was found that male predominance (16 males and 14 females), similar to the study conducted by Choon et al.⁵ In the present study majority of patients belonged to the age group of 20-39 years, which was similar to the study conducted by Pudukadan et al and South Indian study.^{6,7}

Of the various types of adverse drug eruptions seen in the present study maculopapular rash was the common type of adverse drug eruption (40%) which was similar to the study conducted by Sharma et al (34.6%).⁸

Commonly, incriminated drugs in the present study were amoxicillin (30%) followed by diclofenac (23.3%), carbamazepine (20%), phenytoin (16.7%), anti TB drugs (6.7%) and dapsone (3.3%). A study performed by tertiary care hospital in Turkey also showed Amoxicillin to be the most common drug causing adverse drug reaction.⁹

CONCLUSION

It is concluded from the above study that by knowing the incidence, morphological patterns and causative agents of various adverse cutaneous drug reactions, many common and serious adverse effects due to drugs can be avoided. Due to lack of interest in ADR monitoring and poor response of the clinician for pharmacovigilance many of them go unreported. It is the study contention that the use of high-risk drug should be carefully monitored for ADR and awareness should be created in patients by treating physician so that the morbidity and mortality by the use of the drug should be decreased.

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