

## Original Article

### Drug prescription trends in emergency in ICU of tertiary care Hospital

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#### ABSTRACT:

**Background:** Prescribing drugs is always a challenge for a clinician and especially when it is to be prescribed in emergency. The present study was conducted to determine drug prescription trends in emergency. **Materials & Methods:** The present study was conducted in Emergency department of tertiary care hospital on 140 patients of both genders. General information such as name, age, gender etc. was recorded. Route of administration, type of drug etc. was recorded. **Results:** Out of 140 patients, males were 42.85% and females were 57.15%. Males were prescribed 138 drugs and females 182 drugs. Commonly used drug was diclofenac (25%) followed by aspirin (20%), antibiotics (15%), pantopazole (15%), paracetamol (10%), domperidone (10%). The difference was significant ( $P < 0.05$ ). The route of administration was intravenous (40%), intramuscular (10%), oral (15%), inhalational (20%), sublingual (2%) and subcutaneous (0%). The difference was significant ( $P < 0.05$ ). **Conclusion:** The commonly prescribed drug was diclofenac followed by aspirin and antibiotics. The common route of administration was intravenous, intramuscular and oral.

**Key words:** Emergency, Drug, Paracetamol.

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#### INTRODUCTION

Prescribing drugs is always a challenge for a clinician and especially when it is to be prescribed in emergency. Emergency medicine is the specialty that cares for the care seeker, at the most vulnerable moments of their life. There are always chances of error in prescribing drugs in emergency care department as the patient is in critical condition and physicians have to take quick decisions.<sup>1</sup> Also the clinicians come across various patients with varied unforeseen conditions in acute and unpredictable state. Irrational prescribing of drugs may tend to produce an unproductive and a risky treatment to an individual but a rational drug prescription would see to a least number of drugs used in correct dose and dosage form for appropriate indication and to obtain best possible therapeutic effect of drug in short time.<sup>2</sup>

The emergency department represents an important platform for conducting drug utilization studies as patients present with a wide range of diseases in acute form and the drug use is quite extensive. Therefore, evaluating the drug prescribing behaviour and usage patterns in the emergency

settings has the potential of determining the rationality of drug therapy being given in the particular region to a broader extent.<sup>3</sup>

Patients come to the ED for evaluation of emergent or urgent conditions for after-hours medical care, or by referral from their primary physician. In the ED, doctors face urgent and severe cases that need to be treated quickly with high quality. This creates a challenge for physicians to initiate and select appropriate drugs for the patient. Furthermore, the unique operating characteristics of ED make the ED vulnerable to medical errors including medication errors and adverse drug events.<sup>4</sup> The present study was conducted to determine drug prescription trends in emergency.

#### MATERIALS & METHOD

The present study was conducted in Emergency department of tertiary care hospital on 140 patients of both genders. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior to the study from institutional ethical committee. General information such as name, age, gender etc. was recorded. Route of

administration, type of drug etc. was recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant ( $P < 0.05$ ).

**RESULTS**

**Table I Distribution of patients**

Males	Percentage	Females	Percentage
60	42.85%	80	57.15%

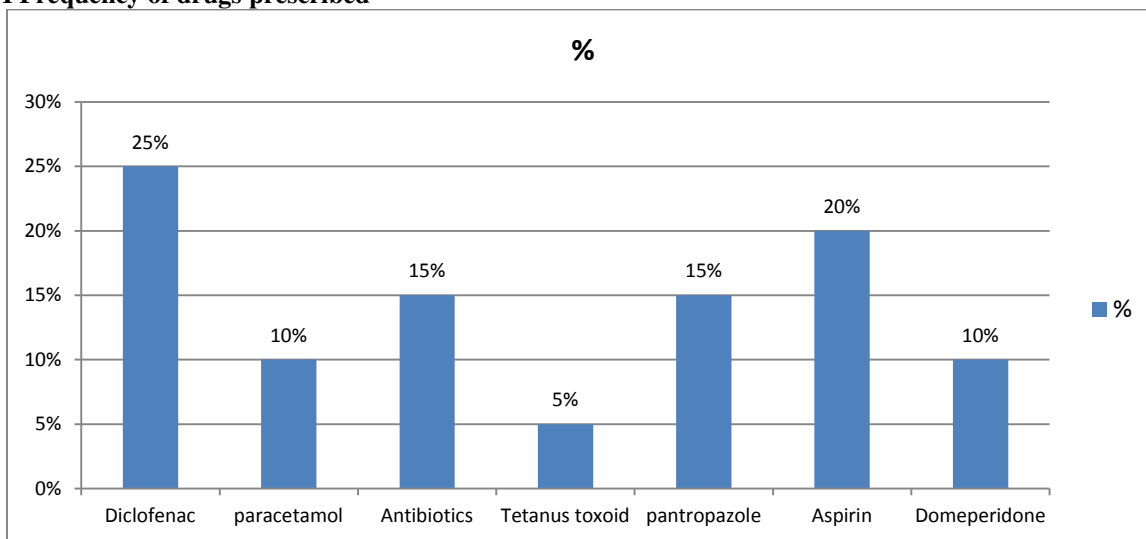
Table I shows that out of 140 patients, males were 42.85% and females were 57.15%.

**Table II Total number of drugs prescribed in patients**

Gender	Number	P value
Males	138	
Females	182	

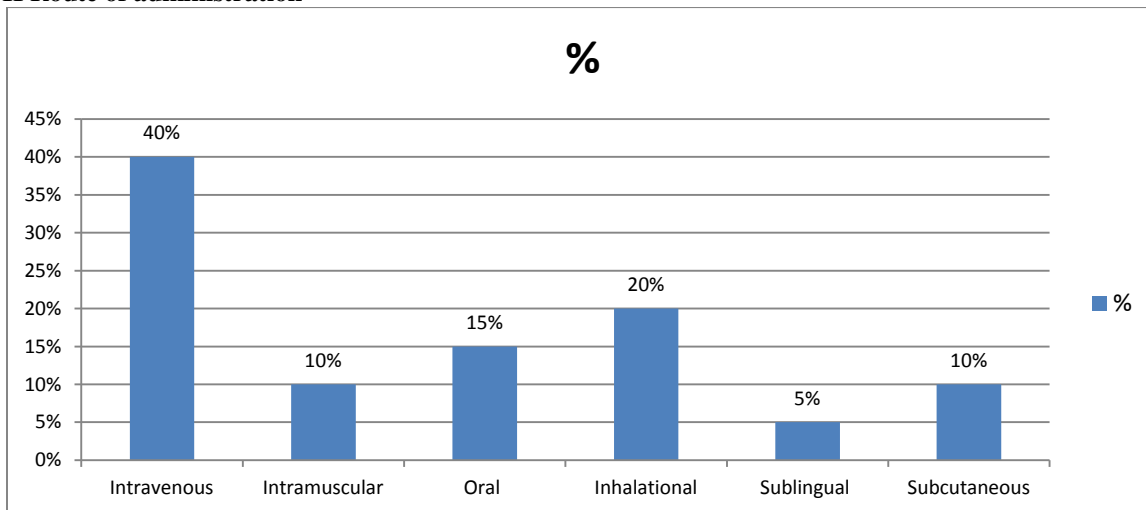
Table II shows that males were prescribed 138 drugs and females 182 drugs. The difference was significant ( $P < 0.05$ ).

**Graph I Frequency of drugs prescribed**



Graph I shows that commonly use drug was diclofenac (25%) followed by aspirin (20%), antibiotics (15%), pantopazole (15%), paracetamol (10%), domeperidone (10%). The difference was significant ( $P < 0.05$ ).

**Graph II Route of administration**



Graph II shows that route of administration was intravenous (40%), intramuscular (10%), oral (15%), inhalational (20%), sublingual (2%) and subcutaneous (0%). The difference was significant ( $P < 0.05$ ).

## DISCUSSION

Emergency department is one of the busiest but neglected departments as far as drug utilization studies are concerned. According to the International Federation for Emergency Medicine it is a field of practice based on the knowledge and skills required for the prevention, diagnosis and management of acute and urgent aspects of illness and injury affecting patients. Irrational prescribing of drugs may tend to produce an unproductive and a risky treatment to an individual but a rational drug prescription would see to a least number of drugs used in correct dose and dosage form for appropriate indication and to obtain best possible therapeutic effect of drug in short time.<sup>5</sup>

Medicines play an important role in health care delivery and disease prevention. The availability and affordability of good quality drugs along with their rational use is needed for effective health care. However, irrational drug use is prevalent, especially in the developing countries due to irrational prescribing, dispensing and administration of medications.<sup>6</sup>

WHO defined drug utilization study as a structured process which is used to assess the quality of drug therapy by engaging in the evaluation of data on drug prescribing, dispensing and patient use in a given health care environment, against predetermined, agreed upon criteria and standards, with special emphasis on the resulting medical, social, and economic consequences. The presence study was conducted to determine drug prescription trends in emergency. We found that out of 140 patients, males were 42.85% and females were 57.15%. Males were prescribed 138 drugs and females 182 drugs. This is in agreement with Sharif et al.<sup>7</sup> Patidar et al<sup>8</sup> showed that 1080 drugs were prescribed in the 450 prescriptions analyzed, average being 2.40 drugs per prescription. Analgesics, proton pump inhibitors and antibiotics were the highly prescribed drugs and commonest routes of administration used were intravenous and intramuscular. Approximately 93% drugs belonged to either or both the WHO and National essential drug lists. The results of the study disclosed both rational and irrational drug utilization. No polypharmacy was observed but 80% drugs were prescribed by brand name.

We observed that route of administration was intravenous (40%), intramuscular (10%), oral (155), inhalational (20%), sublingual (2%) and subcutaneous (0%). Patanwala et al<sup>9</sup> found that a total 82 patients case records were studied. Myocardial infarction (50%) was the most common cardiovascular emergency treated during study period followed by unstable angina (36.58%). Male to female ratio was 1.83. Average hospital stay was found 5.75 days. The average number of drugs per patient was 8.4. Hypertension (42.24%) and diabetes mellitus (19.51%) were the most common comorbidities found associated with cardiovascular emergencies. Aspirin clopidogrel combination (80.49%), enoxaparin (75.61%), atorvastatin

(73.17%), glyceryl trinitrate (73.17%) were the most commonly prescribed drugs. The utilization rate of ACE inhibitors and ARBs (56.10%) was found higher than that of beta blockers (28.05%). Stool softeners (52.46%) and anxiolytics (28.58%) were the most commonly used non-cardiovascular drugs. Improvement was seen in 82.93% patients.

Sulaiman et al<sup>10</sup> found that the average number of drugs prescribed was 6.40 per prescription. The drugs prescribed by generic name accounts for 20.9% and those prescribed from EDL include 83.88%. At least one antibiotic was prescribed for patients which is high (57.31%). Most of drugs were administered through injection for about 49.24%. Patients were mainly admitted for nausea and vomiting (16.92%). Anti-emetics were the mostly prescribed therapeutic class of drugs for patients (24.75%). Hemoglobin (98.65%) was the most common investigation performed in the study population. The commonly used fixed drug combination was piperacillin and tazobactam (3.75%). Analysis of case records for drug utilization pattern revealed that most of the drug classes were prescribed for appropriate indication.

## CONCLUSION

The commonly prescribed drug was diclofenac followed by aspirin and antibiotics. The common route of administration was intravenous, intramuscular and oral.

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