# A Retrospective Analysis on IPD Prescriptions in the Surgery Department In a Tertiary Care Teaching Hospital

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## ABSTRACT

**Introduction:** According to WHO definition, "Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, at the lowest cost to them and their community".

**Methodology:** 200 randomly prescription were included in this study. This study was conducted in Department of Surgery in the Government Medical College, Badaun. The duration of study was over a period of six month.

**Result:** 200 randomly prescription were included in this study.115 fixed combination of different drug were prescribed. These 115 drugs were prescribed for a total of 1159 times/ drug encounters. In our study, the route of administration of drug 44.1% by oral, 47.4% injectable and rest were by other like inhalation, subcutaneous & tropical routes.

**Conclusion:** This study concludes that polypharmacy, overuse of injectable and prescribing by brand names were the challenges identified.

**Keywords:** Drug Pattern, Surgery, Antibiotics, Oral Route, Injectable Route.

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## INTRODUCTION

A prescription can be defined as a written communication from a registered medical practitioner to a pharmacist about instructions on dispensing of prescribed medication. Prescription audit is a quality improvement process.[1] It can be understood as a process of making improvements in patient care and proper use of resources. It is systematic and analyzes medical care critically. Therefore, medical audit is a systematic approach that gives a clear review of medical care. Effective prescription audit is very important for health care professionals, managers, and patients. It also ensures the best care of the patients. For a cost effective and rational prescribing, it is essential to observe and evaluate prescription audit regularly.[2]

According to WHO definition, "Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, at the lowest cost to them and their community".[3] In India there are several drug companies which are producing thousands of products that leads to a tuff competition in the market. Due to this cutthroat competition, pharmaceutical companies encourage doctors to prescribe their medicines in exchange for incentives, sponsorships, and gifts. All over the county, irrational prescribing is a major concern. These wrong prescribing habits together with misuse, overuse and underuse of medicines can lead to unsafe treatment, exacerbation of the disease, health hazards, and economic burden on the patients and wastage of resources. Polypharmacy, inadequate dosage, and use of antimicrobials even for non-bacterial infections, excessive use of injections when oral forms are available and inappropriate, self-medication and noncompliance to dosing regimens are some examples of irrational use of medicines.[4]

International Network of Rational Use of Drugs has developed drug use indicators (DUI). These indicators can be used as a measure of performance in rational use of drugs. These are also known as core drug use indicators.[5] These indicators have been accepted as a global standard to quantify the RDU and have been used in many developing countries for this purpose.[6]

The present study was undertaken to analyses the prescriptions in Department of Surgery based on WHO/INRUD criteria.

## MATERIALS & METHODS

**Study Population:** 200 randomly prescription were included.
**Study Area:** This study was conducted in Department of Surgery in the Government Medical College, Badaun.
**Study Duration:** Over a period of six months.

**Data Collection:** The inpatient case records of 200 patients selected randomly were analysed for the demographic data and prescribing patterns. The data from each prescription was recorded methodically on an excel sheet. The prescription information was then analysed using the WHO/INRUD prescribing indicators recommended for primary health care facilities.

**Data Analysis:** Data were analyzed by using Microsoft excel.

## RESULTS

200 randomly prescription were included in this study.115 fixed combination of different drug were prescribed. These 115 drugs were prescribed for a total of 1159 times/ drug encounters. In our study, the route of administration of drug 44.1% by oral, 47.4% injectable and rest were by other like inhalation, subcutaneous & tropical routes. In the present study 73.9% prescription was given by brand name and rest were by generic name .The antibiotics prescription was 40% out of 115 prescribed drug. Antibiotic which were most commonly prescribed showed in chart 1.

**Table 1: Prescription among total number of cases**

| Total cases | Prescribed different drug | Times/ drug encounters |
|---|---|---|
| 200 | 115 | 1159 |

**Table 2: This table showed administration of route**

| Route of drug | | |
|---|---|---|
| Oral | 512 | 44.1% |
| Injectable | 550 | 47.4% |
| Other | 97 | 8.4% |
| Total | 1159 | 100% |

**Table 3: Prescription of drug by generic or brand name**

| Prescription | | |
|---|---|---|
| By generic name | 30 | 26.09% |
| By brand name | 85 | 73.9% |
| Total | 115 | 100% |

**Table 4: This table showed comparison of subclasses of drug**

| Comparison of subclasses of drugs | | |
|---|---|---|
| Antibiotics | 40 | 34.7% |
| NSAIDS | 19 | 16.5% |
| Anti-peptic | 9 | 7.8% |
| Other drug | 47 | 40.8% |
| Total | 115 | 100% |
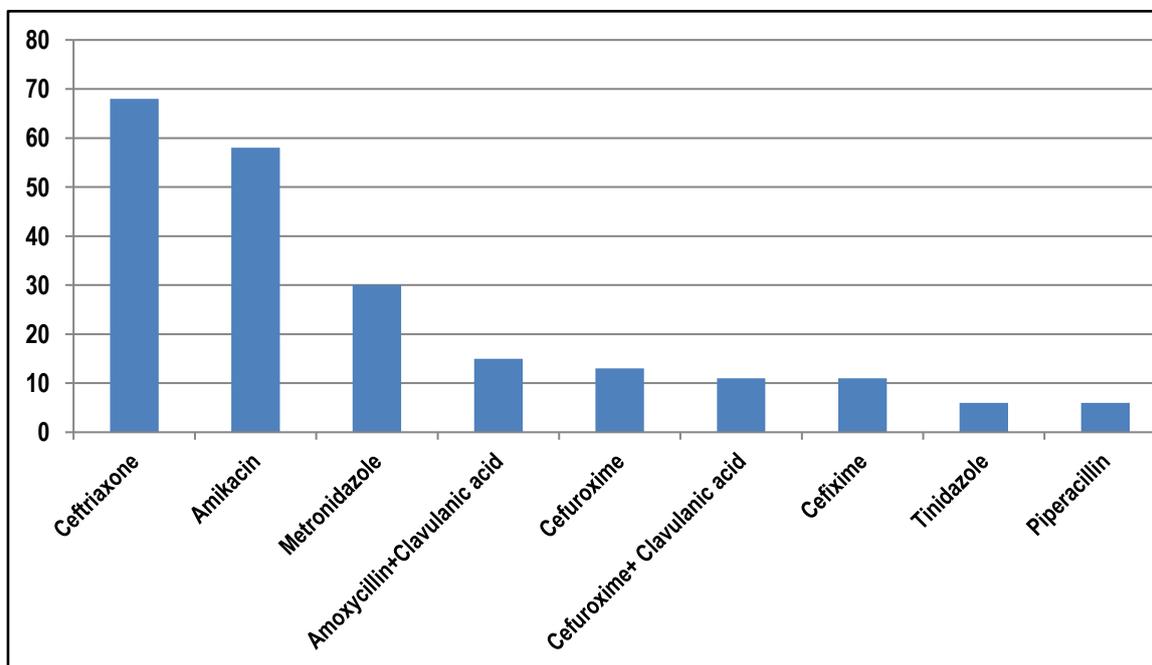


**Chart 1: Most commonly prescribed antibiotics out of 274 from 1159 drug encounters**

## DISCUSSION

In this study, the average number of drugs per prescription was 5.97±2.33. These findings were comparable to other studies in patients from tertiary care hospitals in India.[7-9] This is however higher than the WHO recommended value of <2 drugs per prescription.[10]

In contrast to our results, other studies in the developing countries showed average number of drugs per encounter ranged between 1.3 and 2.93.[6,11] The reason could be due to the different study settings. The present study was conducted in inpatients of surgery department while other studies were conducted in outpatient departments of primary health care centers. Polypharmacy may lead to incidence of adverse drug reactions, drug-drug interactions, drug resistance and an increase in treatment costs. Though, sometimes it may be justified on clinical basis, in pre-operative patients, inpatients, emergency conditions and complicated cases where the net benefits might outweigh the risks. In the present study, drugs prescribed by generic names were 26.09%. It was lower than the WHO standards of 100%. The findings of this study were in coherence with some previous studies.[12-14] The recommendation of WHO in prescribing drugs by generic names is to lowers the economic burden on the patient and ensures better exchange of information among the health care providers due to uniformity of drug names.[15]

In our study, the percentage of injectable was 47.45%. This is again higher than the WHO standard of 13.4–24.1 % for the use of injectable. Similar results with rate of injectable use between 36% and 48% were shown in Uganda, Sudan and Nigeria.[16] The use of injectables should be minimized as it is associated with the risk of bloodborne infections. Oral drugs should be preferred over injectables for the ease of self-administration, cost considerations and requirement of less stringent sterile precautions.

Around 23.64% antibiotics were encountered in this study. Ceftriaxone was the most prescribed (24.82%) antibiotics. The present study did not assess the use of the rationality of antibiotic as it was not a part of our study. Though, the rate of antibiotic use is comparable to a study by Pathak et al (24.27%).[17]

Results of this study showed that the percentage of drugs prescribed from WHO EDL was 29.33%.[18,19]

## CONCLUSION

This study concludes that WHO highly recommended the practice of prescribing drugs from EDL as the drugs in EDLs are more cost-effective, time tested and easily available.

The present study generated data which can be used for analysis of RDU. The findings of the present study also identify the weak areas in rational prescribing in a tertiary care center. Large sample size will be desirable for drafting regulations aiming at RDU at state and national level.

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