

## Pattern of prevalence of diseases and drug prescription in a rural tertiary care teaching hospital of Himachal Pradesh

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### Abstract

**Introduction:** Drug utilization studies are important to know the prescription pattern of drugs by prescriber in a particular hospital.

**Materials and Method:** This was an observational study, undertaken between August 2016 to October 2016, for which data was collected from our OPDs. Results were compiled, tabulated and analyzed using Microsoft excel. Charts were drawn to present all the findings.

**Results:** In total 317 medications were prescribed in 113 prescription notes. Demographic profile shows more females (58%) as compared to males (42%). Maximum patients (73%) were from age group of 20 – 60 yrs. Most common dosage form was oral in 84%, topical were prescribed in 9% and injectable were prescribed in 7%. Maximum number of prescription was written for duration of 4 to 7 days in 36%, followed by more than 10 days in 29%, 8 to 10 days in 11%, 1-3 days in 9% and single dose in 4%. In 11% of prescriptions duration of treatment was not specified. Disease pattern profile shows maximum patients of musculoskeletal disease in 20%, followed by respiratory system in 16%, GIT system and skin in 14%, ENT in 10%, Dental in 7%, CNS in 6% and others in 13%. Common group of drugs prescribed were NSAIDs ± serratiopeptidase in 20% followed by multivitamins and minerals in 17%, antibiotics in 13%, PPIs and antiemetic in 12%, antihistamines in 6%, corticosteroids in 5%, nasal decongestant in 4%, antifungal in 3% and CNS drugs in 3%. Most common antibiotics prescribed was amoxicillin + clavulanic acid in 34%, followed by azithromycin in 22%, doxycycline in 15%, amoxicillin, ofloxacin and cotrimoxazole in 7% each, metronidazole in 5% and Tobramycin in 3%.

**Conclusion:** In government sector policy should be framed according to felt need and consumption of the highly demand drugs in a given society, so that it lead to decrease unwanted expenditure on expensive drugs.

**Keywords:** Prescription pattern, Tertiary rural hospital, Outpatients.

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### Introduction

Inappropriate prescription is known all over the world as a major problem of health care delivery.<sup>(1)</sup> It is more even in developing countries where health budgets are small and 30-40% of total health budget is spent on drugs.<sup>(2)</sup> WHO defines drug utilization study as a structured process which is used to assess the quality of drug therapy by engaging in evaluation of data on drug prescribing, dispensing and patient use in a given health care environment, against predetermined, and agreed upon criteria and standards, with special emphasis on the resulting medical, social and economic consequences.<sup>(3)</sup>

### Aims and Objectives

- To study the disease pattern in our area.
- Common categories of drugs prescribed to OPD patients in our area.
- Antibiotics prescription pattern.

### Material and Methods

This was an observational, prospective study carried out for a period of 3 month between August to October 2016. The data was collected from OPDs of our hospital. These prescriptions were analyzed based on the objective of the study.

Complete information of these all prescriptions entered in the MS Excel sheet. The age, sex and basic information of the patients was recorded. The information like demographic profile of patients, duration of treatment, disease pattern and common categories of drugs prescribed were recorded.

### Results

Total of 317 drugs were prescribed in 113 prescriptions.

Age distribution of patients shows maximum (73.5%) patients were of 20-60 years of age, followed by children (14%), above 60 yrs. were 9% and least were adolescent (3.5%) (Fig. 1).

Dosage forms most commonly prescribed were oral (84%) followed by topical (9%) and least were injectable (7%) (Fig. 2). Dosage forms most commonly prescribed were oral (84%) followed by topical (9%) and least were injectable (7%) (Fig. 3). Maximum numbers of prescriptions were written for duration of 4 to 7 days in 36% followed by more than 10 days in 29%, 8 to 10 days in 11%, 1 to 3 days in 9% and single dose in 4%. While in 11% of prescriptions duration of treatment was not written. (Fig. 4)

Disease profile shows maximum patients of musculoskeletal disease in 20%, followed by

respiratory system in 16%, GIT system in 14%, skin in 14%, ENT in 10%, Dental in 7%, CNS in 6% and miscellaneous in 13%. (Fig. 5)

Common group of drugs prescribed were NSAIDs ± Serratiopeptidase in 20%, followed by multivitamins and minerals in 17%, antibiotics in 13%, PPIs and antiemetic in 12%, antihistaminic in 6%, corticosteroids in 5%, nasal decongestant in 4%, antifungal in 3% and CNS drugs in 3%. (Fig. 6). Most common NSAIDs prescribed were diclofenac, ketorolac, mephenamic acid, ibuprofen and aspirin. Most common antibiotics prescribed were amoxicillin + clavulanic acid in 34%, followed by azithromycin in 22%, doxycycline in 15%, amoxicillin, ofloxacin and co-trimoxazole in 7% each, metronidazole in 5% and tobramycin in 3%. (Fig. 7).

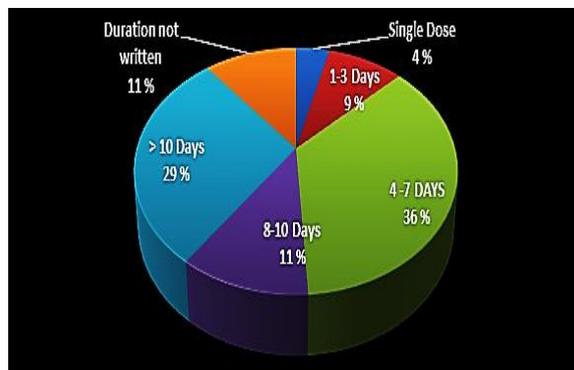


Fig. 4: Duration of treatment profile

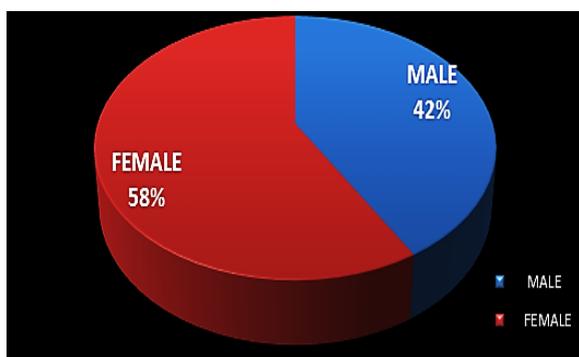


Fig. 1: Gender distribution of patients

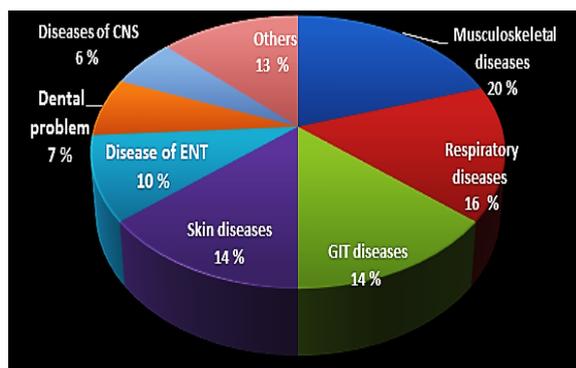


Fig. 5: Disease profiles

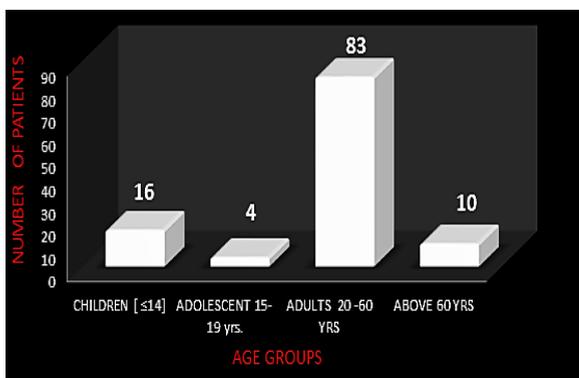


Fig. 2: Age distribution of patients

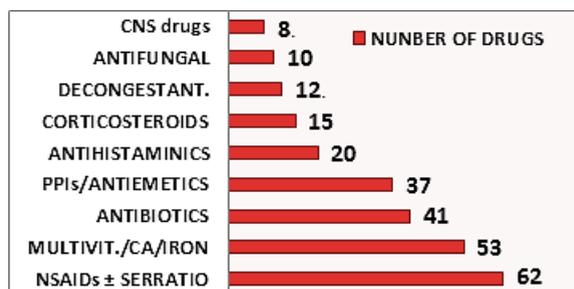


Fig. 6: Common groups of drugs prescribed

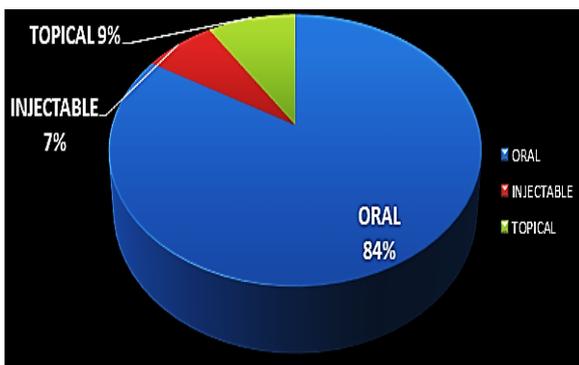


Fig. 3: Dosage forms profiles

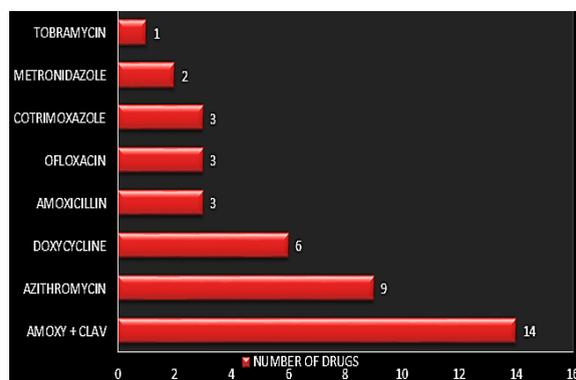


Fig. 7: Common antibiotics prescribed

**Discussion**

Dosage forms most commonly prescribed were oral (84%), followed by topical (9%) and least were injectables (7%). Injectable use in this study were close

to other Indian studies which reported 6.8% and 7% use of injectable respectively.<sup>(4,5)</sup> Injectable were least preferred because in OPDs mostly patients are stable. Injectables may be more on the higher side if study was conducted in Emergency Department.

Maximum number of prescription was written for duration of 4 to 7 days (36%) which was quite appropriate. Most common drugs prescribed were analgesics (20%), multivitamins (17%), antibiotics (13%) and antiulcer ± antiemetic (12%). This means that these drugs are frequently needed by the community.

Analgesics were most commonly prescribed drugs, may be because of patient's demand as patient may be more concerned for their pain.

In our study antibiotics were prescribed in 13% of prescriptions, which is much lower than WHO reference value of 20 – 25.4%.<sup>(6)</sup> Our figures are even lower than figure shown by studies done in Ilorin (45%).<sup>(7)</sup> Many studies from India also reported of high value between 40 -80%.<sup>(8)</sup> Our figures are close to the Nepal study which reported value of 17.5%.<sup>(9)</sup>

Antibiotic most commonly prescribed was amoxicillin + clavulanic acid (34%). This combination has good efficacy because of increased spectrum of action and restored efficacy against amoxicillin resistant bacteria that produce  $\beta$ - lactamase. Azithromycin was prescribed in 22%, it has remarkable pharmacokinetic properties and marked tissue distribution and intracellular penetration. Slow release from intracellular sites lead to long half-life and advantage of once a day dosing. Doxycycline was prescribed in 15% patients is a broad spectrum antibiotic, has bacteriostatic activity against Gram +ve and Gram -ve bacteria. Cotrimoxazole prescribed in 5%, it has low level of resistant as compared to either drug alone.

Multi-vitamins were prescribed in 17% of encounters in this study, which was quite low than other study in which 62.9% prescriptions having multi-vitamins.<sup>(5)</sup> Multi-vitamins are mostly placebo, there use must be limited.

## Conclusion

By conducting study on prevalence of diseases and drug utilization studies, hospital management and health department should make policies based on local community requirement and prescribers are also encouraged to prescribe accordingly. It helps to decrease burden on costly drugs.

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