

Prescription audit of online booked outpatients for department of medicine and dermatology in a tertiary care hospital: a comparative observational study

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ABSTRACT

Background: A regular and effective prescription audit is a key tool to ensure rational use of drugs and to assess drug utilization in the health care system. This study is first of its kind, in Rajendra Institute of Medical Sciences (RIMS), Ranchi, highlighting comparative assessment of prescriptions of online booked appointments in department of medicine and dermatology via online registration system (ORS) using WHO prescribing indicators. This ORS is an integral part under Digital India Initiative.

Methods: This was a comparative, observational study conducted in Department of Pharmacology of RIMS, Ranchi. The study period was 6 months from 1 March 2019 to 31 August 2019. Prescriptions details of outpatient department (OPD) patients were collected from the government authorized pharmacy facility “Dawai Dost” at RIMS. 75 prescriptions from each of the departments were analyzed.

Results: 75 prescriptions from patients who attended medicine and dermatology outpatient department (OPD) during the study period, after registering appointment via ORS, was collected and comparative assessment was done. This audit highlights important correctable parameters although legibility was not the major concern. Adherence to National List of Essential Medicines (NLEM) was 45% and 49% for department of medicine and dermatology respectively.

Conclusions: The prescription audit process should be done regularly to assess ORS prescription to ensure high quality rational prescribing and support Digital India initiative. Adherence to NLEM of India should be 100%. The latest NLEM of India should be provided to the concerned departments and feedback should be provided to the physicians.

Keywords: Digital India, ORS, OPD, Prescription audit

INTRODUCTION

Rajendra Institute of Medical Sciences (RIMS) has three modes of booking for outpatient department (OPD) appointment as traditional queuing method, offline mode at OPD complex and online registration system (ORS) under Digital India Initiative.¹

Government of Jharkhand joined an initiative called ORS developed by National informatics Center in April, 2015 to aid the general public get appointment on the desired date and time in RIMS, Ranchi.^{1,2}

The ORS system is for working people, people coming from distant places, housewives etc., to seek an appointment easily. The benefits includes less time consumption, cost benefit, patient comfort, data sensitivity, effortless, easiness, accuracy, and less errors in contrast to the traditional queuing method. Also, “no-shows” of doctor is expected to be less common with these automated systems. This system has not been audited since the onset of its functioning in RIMS.

The prescriptions of such patients needed to be evaluated with increased effort regularly for prescribing parameters

as laid down by WHO.² A number of other studies have been carried out till date based upon WHO indicators, but till date no such study has been conducted in our college to evaluate OPD prescriptions booked via ORS. This will address the need of patients as well as vision of ORS towards providing better health care and rational prescribing.³⁻⁵

This study is important because these patients travel from far off places which lack health facility; poor prescriptions will lead to revisits, irrational therapy.⁴ Irrational prescribing will increase the chances of adverse drug reactions (ADR) and mortality. Increased cost of treatment in terms of revisit, wastage of time and will finally hemorrhage money and health.⁶ This can serve as a yardstick for further comparison of prescription audit of ORS in RIMS, Ranchi.

A good prescription is expected to be legible, unambiguous, dated, and signed clearly for seamless information exchange between prescriber and pharmacy. It is expected to contain sufficient information to permit the pharmacist or nurse to discover possible errors before the drug is dispensed.

Although there are no defined standards regarding prescription quality indicators available worldwide, there is undoubtedly a correlation between the number of items per prescription and increasing risk of polypharmacy.^{3,4,7}

We used a list of parameters for evaluation of the prescription patterns of medicine and dermatology department. It included patient's demographics, parts of prescriptions, clinical diagnosis and clinical examination, prescribing standards, doctor's name and signature, doctor's registration number, follow up advice, WHO core indicators, legibility, allergy history, food and drug interaction, therapeutic duplication and generic prescribing. The attempt was to narrow down the area of subsequent inquiry using the above list of parameters.

Objective

The objective of the present study was comparative evaluation of prescriptions of online booked OPD patients via ORS, attending Department of Medicine and Dermatology in RIMS, Ranchi, Jharkhand and to suggest necessary modifications for highlight preventable causes of dispensing errors for improved prescribing habits.

METHODS

This was a comparative, observational study conducted in Department of Pharmacology of RIMS, Ranchi, which is the main multi-specialty tertiary care teaching hospital of Jharkhand. The prescription auditing was done on the prescriptions of the outpatients of Department of Medicine and Dermatology of RIMS, Ranchi. The patients who have booked their OPD appointment online via ORS were included in the study. The period of study

was 6 months from 1 March 2019 to 31 August 2019.¹ The prescription parameters for the study was noted on presentation of the prescription at "Dawai Dost" counter facility located at the emergency gate of RIMS, set up to dispense generic medicines to patients. Verbal consent was taken from the patients prior to noting of the details. The prescribing doctor was kept unaware of the auditing process.

Inclusion criteria

All patients who have booked their appointment online for either department of Medicine or Dermatology were included in the study. The patients who came for revisit were included in study.

Exclusion criteria

The patients who were advised admission were excluded from study. The patients who were suffering from multiple diseases or registered for super specialty were excluded from the study. Analysis of data was done by using MS Excel 2007.

RESULTS

The total number of OPD prescription registered from ORS from 1 March 2019 to 31 August 2019 was 87 and 75 in medicine and dermatology respectively.

75 prescriptions of medicine and 75 prescriptions of dermatology department were analyzed for selected prescribing parameters. 60 % of these patients were adults while remaining 40 percent patients belonged to geriatric group (age >60 years).

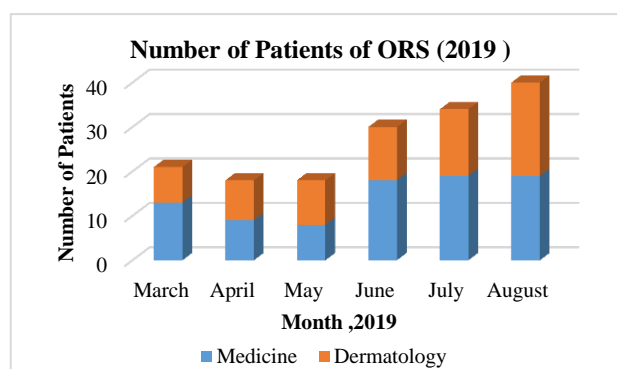


Figure 1: Monthly variation of registered patients.

The proportion of males using ORS appointments was significantly higher in both the departments. For male patient it was 71.26% and 89.33% respectively for the department of medicine and dermatology.

The superscription being computerized had self-filled details by the patients had name, age, sex, address, date of appointment filled by patients themselves. Weight of patient was lacking from 95% of prescription of both

departments. Provisional diagnosis was clearly mentioned in 94.66% (71) of dermatology prescriptions as against medicine with 64.0% (48).

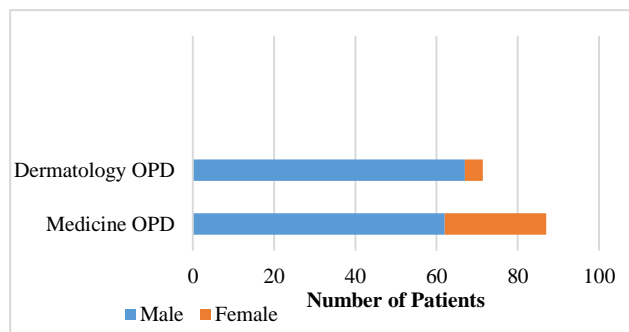


Figure 2: Sex distribution of registered patients.

Poor prescription writing is exemplified by illegible handwriting. Comparative assessment revealed that Dermatology department was scoring above Medicine in terms of legibility. It is shown in Figure 3. Legibility and accuracy are essential.

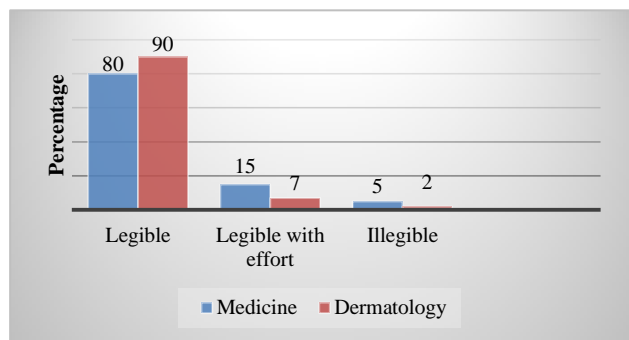


Figure 3: Legibility of handwriting.

During the study period 50% of the patient seeking medicine appointment came for respiratory diseases >30% chronic gastrointestinal problems >20% tropical illness including viral fever.

In dermatology the chief complaint was atopic dermatitis (40%) >acne>scabies>viral warts>tinea infections.

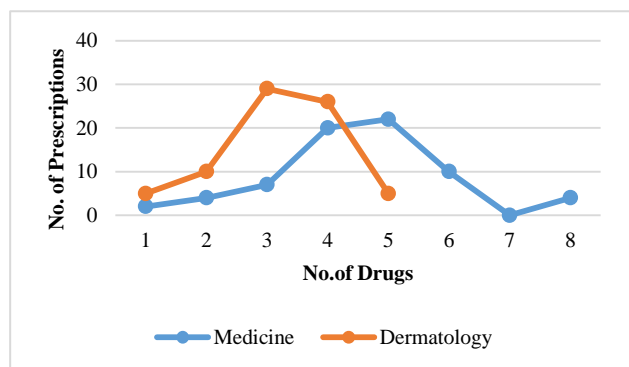


Figure 4: Number of drugs per prescription.

The prescribing standards which includes dose, dosage form, generic name, duration of treatment etc., has to be tailed as per prescribing guidelines which aids in rational prescribing.^{3,8}

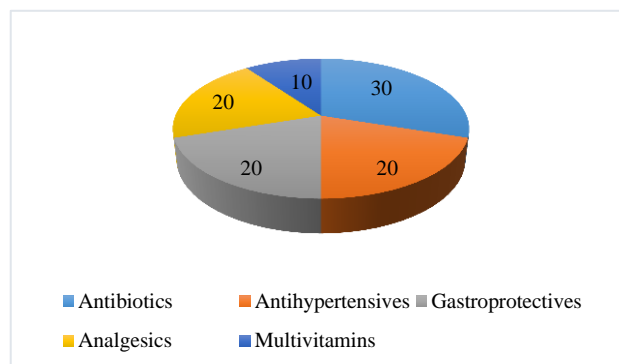


Figure 5: Drugs categories prescribed in medicine department.

The number of drugs per prescription in Medicine department ranged from 2 to 8 drugs while in dermatology it was from 1 to 5 drugs. Most commonly 5 or more drugs per prescription were found in the medicine prescription while dermatology prescription had 3 to 4 drugs per prescription.

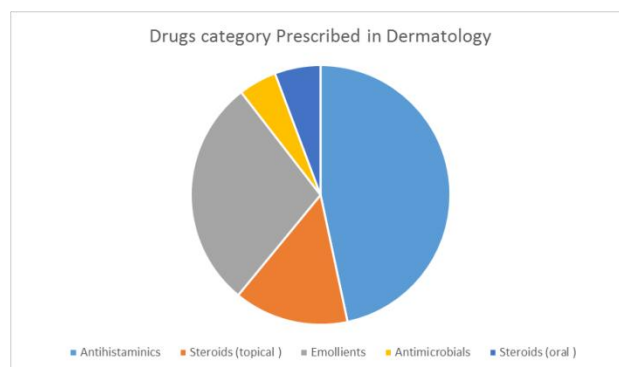


Figure 6: Drugs category prescribed in dermatology.

The total number of drugs prescribed in 75 prescriptions medicine department was 306, average drugs per prescription being 4.06. In dermatology this average was 3.21.

The most common dosage form in medicine OPD was oral formulation among which fixed dose combination was 30%. The antibiotics use was 31% which is higher than the WHO parameter. The number of injections was 1 per prescription during our study period.

The most common dosage form in skin OPD was oral and topical both sharing equal proportions. It was followed by commonly prescribed emollient >small proportion of injectable including antimicrobial and steroids. Average number of injectable was 1 or none per prescription.

Table 1: Comparison of core prescription indicators of WHO.

Parameter	Medicine	Dermatology
Average number of drugs per encounter	4.06	3.21
% of prescribed generic	4.1	3.8
% of injections per encounter	4.5	0.8
% of drugs from NLEM	45	49
Allergy history absent (%)	40	20
Food-drug interaction history absent (%)	70	75
Therapeutic duplication (%)	20	15
Follow up advice absent (%)	45	28
Clinical examination details absent (%)	30	38

“No shows” of doctors and hence revisit for same was not reported by patients from either department.

DISCUSSION

This comparative study was an attempt to highlight the existing prescribing pattern of prescription of ORS registered patients in department of Medicine and dermatology, which caters to the health, needs working, educated and distant living population.

Although there are no defined standards regarding prescription quality indicators available worldwide, there is undoubtedly a correlation between the number of items per prescription and increasing risk of polypharmacy leading to drug to drug interaction, increased cost of therapy and also indicates prescriber is unclear of underlying disease.³⁻⁵

The absence of clinical examination detail findings, follow up advice date on the prescription would lead to problems in tracing the progress during the follow up.⁴

Therapeutic duplication and adherence to NLEM of India can bring down the problem of polypharmacy and unnecessary treatment cost. The practice of branded medicines may indicate that prescribing habits are being modified by drug manufacturing agents for profits. This may increase cost burden among patients. Practice of generic medicines will decrease the incidence of dispensing error.⁹⁻¹¹

Since no similar study was available so, comparison apart from the WHO prescribing parameter yardstick was not possible.

CONCLUSION

Based on what the results revealed in this study, there is an inevitable need to improve prescription habits of both the specialties which is indeed preventable at the tertiary care level. The latest NLEM of India should be provided to the concerned departments and regular evaluation and feedback should be provided to the physicians. A

separate queue or time slot should be provided to the patient booking appointment via ORS.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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