Prescription Audit Study From a Tertiary Care Teaching Hospital in Telangana

Pendurthi Vidyasagar[1], Karrepu Sri Chaitanya Reddy[2], Cheemala Naresh Yadav[3], Yamini Vadlamannati[4], Naser Ashraf Tadvi[5]

[1]Postgraduate, Department of Pharmacology, Government Medical College, Nalgonda, Telangana
[2] Postgraduate, Department of Pharmacology, Government Medical College, Nalgonda, Telangana
[3] Postgraduate, Department of Pharmacology, Government Medical College, Nalgonda, Telangana
[4]Associate Professor, Department of Pharmacology, Government Medical College, Nalgonda, Telangana
[5]Professor and Head, Department of Pharmacology, Government Medical College, Nalgonda, Telangana

Abstract:

Background: The inappropriate use of drugs is a global health problem, especially in developing country like India. Irrational prescriptions have an ill effect on health as well as health-care expenditure. Prescription auditing is a crucial tool to improve the quality of prescriptions, which in turn improves the quality of health care provided.

Methods: This observational cross-sectional study was conducted for a period of one month in GMC, GGH, Nalgonda. All prescriptions were analysed for Demographic data, medical components and WHO core drug use indicators. The obtained data was expressed in percentage and frequency.

Results & Conclusion: The prescribing practices in this study were good regarding mentioning of general details of patients and hospital, and satisfactory regarding handwriting legibility of physicians and average number of drugs prescribed per prescription.

Keywords: Prescription, India, Health care.

Introduction

- The inappropriate use of drugs is a global health problem, especially in developing country like India.
- Irrational prescriptions have an ill effect on health as well as health-care expenditure.
- Prescription auditing is an important tool to improve the quality of prescriptions, which in turn improves the quality of health care provided.[1]
- Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately.
- 50% of patients fail to take them correctly.

Aims and Objectives

1. To study the data on drug prescription pattern,
2. To analyse the prescriptions according to WHO core drug use indicators. [2]

Material and Methods

This observational cross-sectional study was conducted for a period of one month in GMC, GGH, Nalgonda. After approval from Institutional Ethics committee, the OP Prescriptions were collected irrespective of clinical departments. All prescriptions were analysed for Demographic data, medical components and WHO core drug use indicators. The obtained data was expressed in percentage and frequency.

The WHO drug use indicators [2] which include three groups

1. **Prescribing Indicators**

- Average number of drugs per prescription.
- Percentage of drugs prescribed by generic name.
- Percentage of prescriptions containing antimicrobial agents (antibiotics).
- Percentage of injections per prescription.
- Percentage of drugs prescribed from the EDL. (Essential drug List)

2. **Patient Care Indicators**

- Average consultation time.
- Average dispensing time.
- Percentage of drugs dispensed.
- Percentage of drugs adequately labelled.
- Patient's knowledge of correct dosage.

3. **Health Facility Indicators**
- Availability of copies of EDL (Essential drug List) in all OPDs.
- Availability of key drugs.

Table 1: Medical components of prescription precentage

Medical components of prescription	Percentage
Diagnosis	64%
History	56%
Examination	86%
Investigation	89%
correct dose and diagnosis and dosage	96%
Duration of treatment	62%
Follow up advice	55%
Reason for referral	35%
Legible handwriting	92%
Legible signature	87%
Doctor registration number	1%
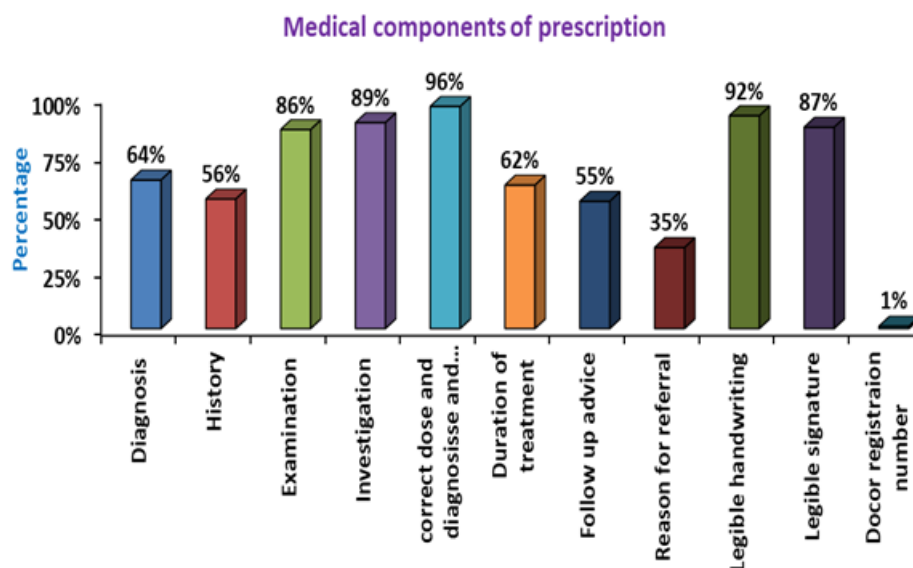
Figure 1: Medical components of prescription

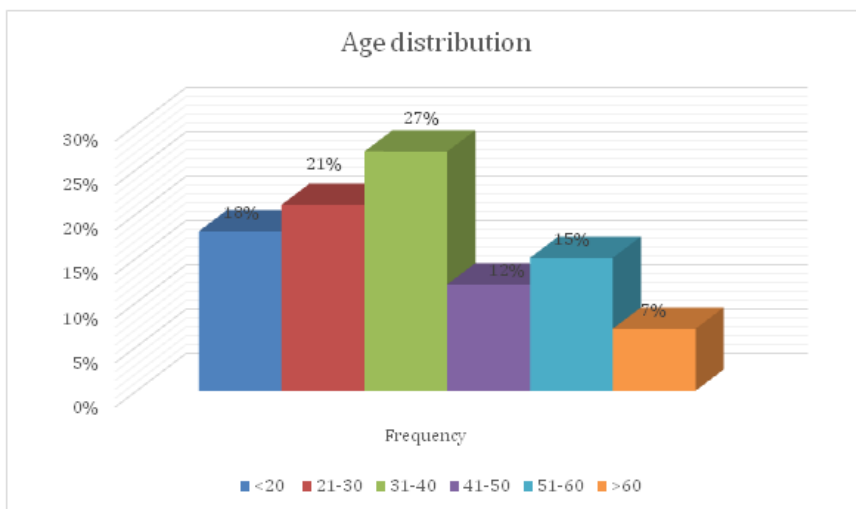**Table 2: Age of patients with frequency**

Age of patients	Frequency
<20	18%
21-30	21%
31-40	27%
41-50	12%
51-60	15%
>60	7%

Figure 2: Age Distribution

Table 3: Most common group of drugs prescribed with frequency

Most common group of drugs prescribed	Frequency (%)
Creams, gels, lotions etc.	17.50%
PPIs	15%
Antibiotics	13.80%
Analgesics	11%
Multivitamins	10.60%
Antihistaminic	7.70%
Gabapentin	4%
Calcium	2.80%
Laxatives	1.60%
Paracetamol	3.20%
Miscellaneous	12.10%

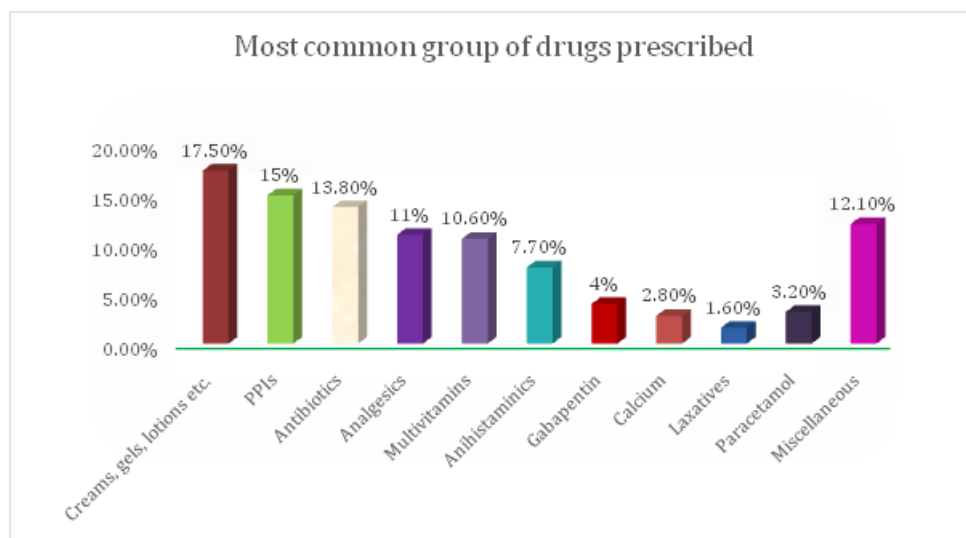**Figure 3: Most common group of drugs prescribed**

Table 4: Most common antibiotics

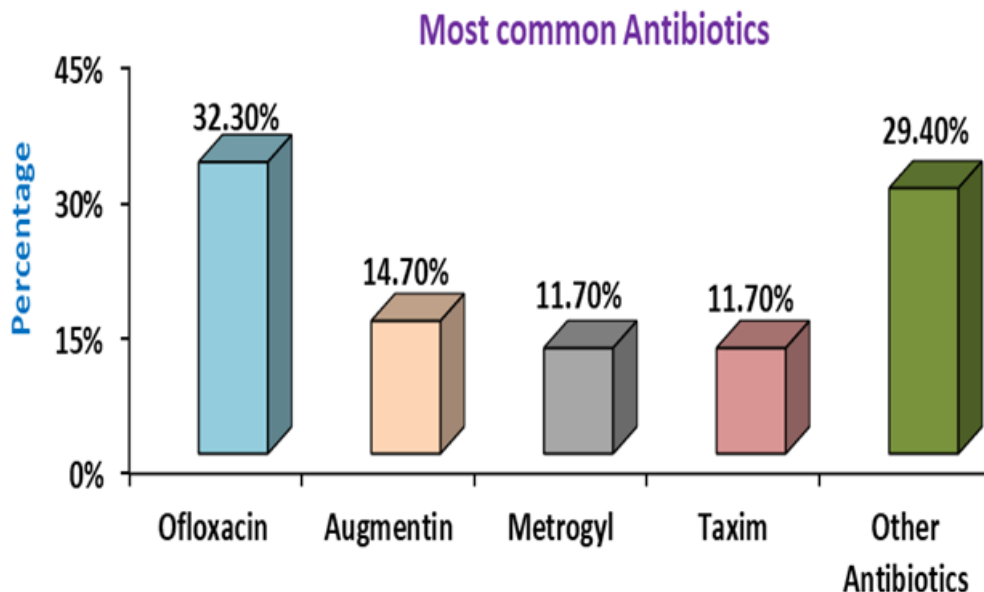| Most common Antibiotics	Frequency (%)
Ofloxacin	11(32.3%)
Augmentin	5(14.7%)
Metrogyl	4(11.7%)
Taxim	4(11.7%)
Other Antibiotics	10(29.4%)

Figure 4: Most common antibiotics

1. **Prescribing indicators**

Table 5: Prescribing indicators

Prescribing indicators	No. (%)
Average number of drugs per prescription	2.43
Percentage of drugs prescribed by generic name	79
Percentage of Prescriptions containing antimicrobial agents (antibiotics)	38
percentage of injections per prescription	0.38
Percentage of drugs prescribed from the EDL	79

2. **Patient care indicators**

Table 6: Patient care indicators

Average consultation time	2 minutes
Average dispensing time	1.5 minutes
Percentage of drugs actually dispensed	76%
Percentage of drugs adequately labelled	79%
Patients' knowledge of correct dosage	49%

3. **Health facility indicators**

Table 7: Health facility indicators

Availability of copy of essential drugs list in all OPDs	79%
Availability of key drugs	94%

Discussion

1. The average no. of drugs is (2.43) /encounter (our study)

- Vs drug use pattern in secondary level hospitals (3.1). [3]
- Study of assessment of drug use pattern using WHO prescribing indicators at Kathmandu, Nepal (1.9). [4]

This parameter is a measure for polypharmacy. Polypharmacy increases healthcare cost and adverse drug reactions.

2. Percentage of drugs by Generic name 79% (our study).

Ajar Kumar Sahoo et al in retrospective analysis of drug prescription statistics in a tertiary care Centre in India - 50%. [5]

Another study by Mukesh Sharma et al conducted in north India got use of generic names 68.5%. [6]

3. In our study, the percentage of prescriptions containing antibiotics was 38%.

- Vs antibiotic by Tulika Singh et al was 52.5%. [1]

- A study by Sujith J. Chandy et al, in Vellore, the percentage of encounter with antibiotics was 40.9%. [7]
- Bhavesh k. Lalan, et al, In a tertiary care teaching hospital in Maharashtra 46.17%. [8]

4. In our study the percentage of drugs from EDL (Essential drug List) India was 79%.

- A study by Jhaj R, Banerjee A et al the percentage of drugs from EDL was 69%. [9]
- Another study by Arora et al percentage of drugs from EDL is 51.75%. [10]

5. Average consultation time 2 mins. (our study).

- BA Ahmed et al in assessment of patient waiting and consultation time in a primary health care clinic -11 min. [11]
- T. Singh et al showed 2.8 min. [1]
- Another study by Mukesh Sharma conducted in north India 7.3 min. [6]

6. Average dispensing time 1.5 min (our study).

- Amitabha Chattopadhyay et al conducted in Kolkata got 4.3 min. [12]

Conclusion

- The prescribing practices in this study are satisfactory as the usage of antibiotics are according to WHO guidelines, there is no polypharmacy and awareness about the essential drug list.
- Our study explains the need to increase the consultancy time, to write the registration number of doctors in the op prescription and to increase the awareness of patient knowledge of correct dosage by utilising pharmacovigilance week, conducting rural health programmes etc.

References

1. Singh T, banerjee B, garg S, sharma S. A prescription audit using the world health organization-recommended core drug use indicators in a rural hospital of delhi. J Edu health promot 2019; 8:37.
2. World health organization. How to investigate drug use in health facilities: selected drug use indicators – EDM research series no 007. 1993.
3. Debraj mukhopadhyay et al, A descriptive study on prescription audit of prescribing patterns in primary, secondary, tertiary healthcare facilities in department of public health, school of allied health sciences, Delhi pharmaceutical sciences and research university (DPSRU), govt. Of NCT Delhi, new Delhi – 110017.
4. Shrestha, Sanjaya mani dixit, the assessment of drug use pattern using WHO prescribing indicators. J Nepal health res counc. 2018 oct 30;16(3):279-284.
5. Kumar YEP et al. A study of prescription auditing in inpatient general medicine in tertiary care government hospital. Int J res med sci. 2020 nov;8(11):3979-3982.
6. Sharma M, Payal N, devi LS, et al. Study on prescription audit from a rural tertiary care hospital in north India. J pure appl microbiol. 2021;15(4):1931-1939.
7. Sujith J. Chandy, kurien thomas, Elizabeth mathai et al, patterns of antibiotic use in the community and challenges of antibiotic surveillance in a lower-middle-income country setting: a repeated cross-sectional study in Vellore, south India, journal of antimicrobial chemotherapy, volume 68, issue 1, January 2013, pages 229–236.
8. Lalan BK, Hiray R, Ghongane B. Drug prescription pattern of outpatients in a tertiary care teaching hospital in Maharashtra. Int J Pharm Bio Sci. 2012; 3:225-9.
9. Jhaj R, Banerjee A, Kshirsagar NA, Sadasivam B. Et al, Use of drugs not listed in the national list of essential medicines: findings from a prescription analysis by the Indian council of medical research-rational use of medicines centres network in tertiary care hospitals across India. Indian J pharmacol. 2022; 54:407-16.
10. Surabi Arora, Afroz Abidi, Dilshad Ali Rizvi, A prescription audit and assessment of drug utilization pattern in A tertiary care teaching and referral hospital in Uttar Pradesh, India: Asian J pharm clin res, 2019; 12(12):161 – 165.
11. Ahmad BA, Khairatul K, Farnaza A. An assessment of patient waiting and consultation time in a primary healthcare clinic. Malays fam physician. 2017 Apr 30;12(1):14-21.
12. Amitabha Chattopadhyay, Tanushree Mondal, Tushar Kanti Saha et al, An audit of prescribing practices in CGHS dispensaries of Kolkata, India. IOSR journal of dental and medical sciences (IOSR-JDMS). Volume 8, issue 1 (May. - Jun. 2013); 32-37.