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ASSESSMENT OF PRESCRIPTION ERRORS AT TERTIARY CARE HOSPITAL AT ANANTHAPURAMU

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Abstract

Background: To encourage responsible drug use in developing nations, a study of drug use patterns using WHO indicators is required.

Aim: To assess the prescription errors, present in the sample and to reduce the prescription errors in the future.

Primary objective: To prevent errors in prescription

Secondary objective: To optimize drug related problems

Methodology: A cross-sectional study was conducted at Government general Hospital Ananthapuramu. The outpatient prescriptions retained at the pharmacy from October 2022 to March 2023 were used to evaluate prescription errors. The total of 278 prescriptions were reviewed. The Descriptive Statistical mean method was used.

Results and discussion : In a population of 278, we observed all prescriptions are error. The major factor involved in medication errors are dose, chief complaints, prescriber name, department, diagnosis, hence there is a need to critically addressed legality of the prescription.

Conclusion: Early detection of medication error will improve therapeutic outcome, implementation of the medication error reporting system in the hospital, and educating pharmacist regarding the effects of medication error will reduce the cost of treatment, improves patient care and safety.

Key words: Clinical pharmacist, Medication error, Prescriptions, Therapeutic outcome

Introduction

The purpose of pharmacological therapy is to raise the quality of life for the patient. The practise of medicine is essential to medication therapy. The medication must be administered appropriately, understanding what a patient should receive the appropriate amount of medicine for an appropriate amount of time according to clinical need. Unnecessary medication use consumes resources and lowers the standard of patient care. Safe, effective, and reasonably priced medications are essential. [1] The best strategy to improve health status is through reasonable access to and use of needed medications. The prescription is a legal document that contains instructions for medication given to the chemist by a qualified medical professional. A standard procedure established by the WHO, the research on prescribing medications evaluates the performance of healthcare professionals in relation to the appropriate use of medications. To encourage responsible drug use in developing nations, a study of drug use patterns using WHO indicators is required. [2] Almost 30 developing nations have employed WHO indicators, which are methodologies that are widely accepted. The degree of polypharmacy, a propensity to prescribe generics, levels of antibiotic use and injection, and the proportion of medications recommended from the essential drug list are among the core prescribing indicators. [3] The previous study, conducted at a teaching hospital in Nepal, found lower generic medicine prescription rates, greater antibiotic prescription rates, and less prescribing from the WHO List. To assess the prescription errors, present in the sample and to reduce the prescription errors in the future.

Methodology:

Study design: Prospective cross-sectional study

Study site: Government general hospital, Anantapur

Study duration: October 2022 to march 2023

Study criteria: Based on inclusion and exclusion criteria

Study tool: A study-based data collection form was developed

Sources of data: Participant interview, Medical records and Lab report

Study procedure:

1. Ethical clearance (IRB Approval Number: IRB/2022/GGH/PD/)
2. Collection of data
3. Assessment of data
4. clinical pharmacist intervention
5. Statistical analysis: Descriptive statistics

Results:

Table 1: Percentage distribution of errors based on prescriptions

Category	No of prescriptions	No of errors	Percentage
Name	278	2	0.71%
Age	278	23	8.27%
Gender	278	21	7.55%
Date	278	4	1.43%
Diagnosis	278	110	39.5%
Dose	278	205	73.74%
Chief complaints	278	237	85.25%
Frequency	278	21	7.55%
Signature	278	11	3.95%

Table 2: prescribing indicators (n=278)

Prescribing indicators assessed	**Total drugs/ encounters**	**Average/ percentage**	**WHO standard derived or ideal (%)**
Average number of drugs per encounter	1246	4.5%	1.6 – 1.8%
Percentage of with antibiotics	203	73%	20 – 26.8%
Percentage of encounter with injection	40	14.3%	13.4 – 24.1%
Percentage of drugs prescribed by generic	225	80.9%	100%
Percentage of drugs from essential drug list	187	67.2%	100%

Table 3: Degree of medicines prescribed (n=278)

Number of medicines per prescription	Frequency (%)	Number of antibiotics per prescription	Frequency (%)
0	0 (0%)	0	85 (30.5%)
1	25 (8.9%)	1	151 (54.4%)
2	14 (.3%)	2	42 (15.1%)
3	23 (8.2%)	3	0 (0%)
4	46 (16.5%)		
5 and above	170 (16.1%)		
Total	278 (100%)	Total	278 (100%)

Table 4: Frequently prescribed medicines (n=1246) and antibiotics (n=203)

S.NO	Frequently prescribed medicines	Frequency (%)
1.	Pantoprazole	153 (55.0%)
2.	Cefixime	102 (36.6%)
3.	B. complex	106 (38.1%)

4.	Vitamin C	68 (24.4%)
5.	Paracetamol	97 (34.8%)
6.	Deriphyline	12 (4.3%)
7.	Ranitidine	27 (9.7%)
8.	Calcium	55 (19.7%)
9.	Amoxiclav	52 (18.7%)
10.	Cetrizine	18 (6.4%)
11.	Serratiopeptidase	51 (18.3%)
12.	Diclofenac sodium	54 (19.4%)
13.	Metronidazole	42 (15.1%)
14.	Azithromycin	7 (2.5%)

S.NO	Frequently prescribed antibiotic	Frequency (%)
1.	Azithromycin	7 (2.5%)
2.	Cefixime	102 (36.6%)
3.	Amoxiclav	52 (18.7%)
4.	Metronidazole	42 (15.1%)

Table 5: Prescription error

Types of errors	No. of errors (percentage)	Average error per prescription
Errors of omission related to prescriber (n=278)		
Patient name not mentioned	2 (0.71%)	0
Age not mentioned	23 (8.27%)	0
Prescription date not mentioned	4 (1.43%)	0
Prescriber name not mentioned	232 (83.4%)	0.8
Department not mentioned	270 (97.1%)	1.0
Diagnosis not mentioned	10 (39.5%)	0.4
Total error	641	2.3
Errors of omission related to drugs per total medicine dispensed (n=1246) and per prescription (n=278)		
Dose not mentioned	205 (73.7%)	0.7
Frequency not mentioned	21 (7.5%)	0
Dosage form not mentioned	1 (0.3%)	0
Quantity to supply not mentioned	10 (3.5%)	0
Total errors	237	0.8

Table 6: Drug – Drug interactions according to Medscape

Intensity of interaction	Number (%)
Serious	5 (8.9%)
Moderate	24 (42.8%)
Minor	27 (48.3%)

Discussion:

In a population of 278, we observed all prescriptions are error. The major factor involved in medication errors are dose, chief complaints, prescriber name, department, diagnosis, hence there is a need to critically addressed legality of the prescription. Early detection of medication error will improve therapeutic outcome, implementation of the medication error reporting system in

the hospital, and educating pharmacist regarding the effects of medication error will reduce the cost of treatment, improves patient care and safety. [4-8]

Conclusion:

The study recommended strengthening with a particular emphasis on formulating policy and evidence-based clinical guideline focusing essential medicine, generic prescribing, appropriate antibiotic use and controlling the polypharmacy. The study recommended the need for qualified clinical pharmacists and professional interaction to evaluate drug use, trace error and manage accordingly.

References

1. Isah A, Ross-Degnan D, Quick J, Laing R, Mabadeje A, editors. The development of standard values for the WHO drug use prescribing indicators. International conference on improving use of medicines (ICIUM)INRUD—Nigeria1, support Group; 2008.
2. Hogerzeil HV, Ross-Degnan D, Laing R, Ofori-Adjei D, Santoso B, Chowdhury AA, et al. Field tests for rational drug use in twelve developing countries.Lancet. 1993;342(8884):1408–10.
3. Ghimire S. Students' corner-a prospective surveillance of drug prescribing and dispensing in a teaching hospital in Western Nepal. JPMA The Journalof the Pakistan Medical Association. 2009;59(10):726. [33]. Tamuno I, Fadare JO. Drug prescription pattern in a Nigerian tertiary hospital. Trop J Pharm Res. 2012;11(1):146–52.
4. Abidi A, Gupta S, Kansal S. Prescription auditing and drug utilization pattern in a tertiary care teaching hospital of western UP. International Journal of basic & clinical pharmacology. 2017;1(3):184–90.
5. Cryer B, Barnett MA, Wagner J, Wilcox CM. Overuse and misperceptions of nonsteroidal anti-inflammatory drugs in the United States. Am J Med Sci.2016;352(5):472–80.
6. Visconti M. Proton pump inhibitors overuse: only inappropriate prescriptions or further iatrogenic damage? Italian Journal of Medicine. 2015;9(3):217–28.
7. Atluri S, Sunkara T, Venkat R, Yakhnenko L, Narendra N, Culliford A, editors. A Plan to Correct Overuse of PPIs in a Teaching Hospital: An Economic Burden to the Health Care Industry and Safety Concerns. AMERICAN JOURNAL OF Gastroenterology; 2013:

Nature publishing group 75 Varick ST,9TH FLR, NEW YORK, NY 10013–1917 USA.]]

8. Ansari M, Neupane D. Study on determination of errors in prescription writing: a semi-electronic perspective. Kathmandu University Medical Journal. 2009;7(3):238–41.