ejpmr, 2021,8(7), 702-704

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

A PILOT STUDY ON DRUG PRESCRIBING PATTERN AMONG GERIATRIC INPATIENTS AT GENERAL MEDICINE DEPARTMENT IN A TERTIARY CARE TEACHING HOSPITAL

Arunima G.*, Nithin Manohar R., Jomin George Joseph, Albin J. Enchiparambil and Santhosh M. Mathews

Department of Pharmacy Practice, Pushpagiri College of Pharmacy, Thiruvalla, India.

***Corresponding Author: Arunima G.**

Department of Pharmacy Practice, Pushpagiri College of Pharmacy, Thiruvalla, India.

Article Received on 20/05/2021 **Article Revised on 09/06/2021** **Article Accepted on 30/06/2021**

ABSTRACT

Background: Geriatric population suffer from multiple comorbid conditions and also prolonged hospitalization so there is an increased occurrence of polypharmacy and drug-related issues. **Aim:** Aim of this study is to assess the drug prescribing pattern among geriatric inpatients at general medicine department. **Objectives:**[1] to analyse the prescriptions using WHO core prescribing indicators.[2] to assess the appropriateness of medication prescribed using Beers criteria.[3] to analyse the drug –drug interactions among the prescribed medication.[4] to identify the presence of polypharmacy. **Materials and method:** It is ahospital based, Retrospective (Observational) Study. Data collected from patients admitted in the General Medicine Department, during the period of 2018-2020 and those who satisfy the inclusion and exclusion criteria. **Results:** The data analysed insights that the prescriptions are not in accordance with WHO standard. Also presence of inappropriate medicines(30%)according to beers criteria and polypharmacy. **Discussion:** In this study the data obtained analyse that the geriatric patients more in the age group 80-84(40%) and of male gender (40%).The prescriptions not in accordance with WHO standard. A total of 3 prescriptions out of 10 were found to be inappropriate according to beers criteria. No drug –drug interactions found. The presence of polypharmacy evident. **Conclusion:** the current treatment practice in the hospital is associated with polypharmacy and the presence of potentially inappropriate medicines.

KEYWORDS: Geriatrics, WHO core prescribing indicators, Beers criteria.

INTRODUCTION

Drug prescribing pattern is the assessment of whether a drug prescribed to a patient is appropriate in terms of his /her illness, risk factors and medication adherence. Geriatrics represent people having 65 years and above. They are the most vulnerable and high risk population with multiple comorbidities. Rational prescribing enables safe and effective drug therapy to the patient. Usually, elderly people have multiple drug therapy. 13% of total population belong to elderly, 30% of total medication used is prescribed for them. Selection of medicines in elderly are influenced by various factors since they are more sensitive to the drug effect and also more prone to drug related potential hazards. The paucity of literature upon the use of medicines in elderly makes these selections riskier. The elderly people suffer from multiple comorbid conditions and rely on polypharmacy. Polypharmacy implies simultaneous use of 5 or more medicines. Use of many medicines directly or indirectly have a strong trigger to adverse drug reactions / drug interactions. Among drug interactions, drug –drug interactions are the most common observed problem in elderly patients. These type of adverse drug reactions, polypharmacy drug-drug interactions can either cause toxicity or reduced effect of prescribed drug. Significant morbidity and mortality in population increases with age. So clinicians must provide better health care therapy containing benefits that outweighs risks.

Prescriptions can be analysed using WHO core prescribing indicators.

- Aims to evaluate the healthcare service provided.
- Quality of healthcare service.

The prescribing indicators include

Medication average per medical prescription

This indicator helps to determine polypharmacy which may cause adverse drug reactions and drug interactions.

Percentage of medication prescribed with generic name

This indicator helps to control drug costs in the healthcare system.

Percentage of prescribed drugs from list of essential drugs

The essential drug list guarantees the treatment of principal diseases of population.

Percentage of prescribed antibiotics

This indicator helps to prevent antibiotic resistance.

Percentage of prescribed injectable drugs
This indicator helps to prevent anaphylactic reactions associated with injectable in excess.

Table 1: Assessment of drug use pattern using WHO prescribing indicators.

Sl no	Prescribing indicators assessed	WHO standard
1	Average number of drugs per encounter	1.6-1.8 %
2	Percentage of drugs prescribed by generic name	100%
3	Percentage of encounter with antibiotics	20.0-26.8 %
4	Percentage of encounter with injection	13.4-24.1 %
5	Percentage of drugs from essential drug list	100%

Appropriateness of medicines in elderly patients.
Potentially inappropriate medications have more risk than clinical benefit.
Potentially inappropriate medicines can be identified using Beers criteria.
It classifies drugs into 3 groups.
Category A: Drugs that are potentially inappropriate for use in elderly.
Category B: Drugs that have to be avoided in a particular drug or disease.
Category C: Drugs that have to be used with caution.
Beers criteria helps to deliver safe and effective medications to elderly people.

MATERIALS AND METHODS

The present study was conducted after clearance from the Institutional Ethics Committee. It was carried out in the General Medicine Department of a tertiary care hospital.

Inclusion Criteria
Patients of age 65yrs and above, either male or female; admitted in general medicine.

Exclusion criteria
Patients below 65yrs of age, patients with improper data.

PROCEDURE

Six-monthstudy, first obtained RMC approval and then IEC approval. All patients who fulfil the inclusion criteria will be selected for the study.

Data collection form will be used for recording the demographic details, past medical history, adverse drug reactions and lab parameters.

Information about the drug prescribed (i.e., generic and trade name, formulation,) were collected.

Relevant information will be taken from patient case file.

RESULT AND DISCUSSION

In this section, result explained based on 10 patient cases out of sample size (n=133) until now.

Table 1: Distribution of Patients Based On Age.

Sl no	Age	Frequency	Percentage(%)
1	65-69	2	20
2	70-74	2	20
3	75-79	2	20
4	80-84	4	40

From the above table, it is clear that the most of the patients belongs the 80-84 yearsage group.

Table2.

Sl no	Gender	Frequency(n=10)	Percentage (%)
1	Male	6	60
2	Female	4	40

From the above table,out of 10 cases it is clear that majority of patients lies in the female gender.

Table 3: Number of medications per prescription.

Sl no	Number of drugs	Frequency(n=10)	Percentage(%)
1	1-4	0	0
2	5-9	4	40
3	10-14	5	50
4	15-19	0	0

From the above table, out of 10 cases it is clear the no of drugs per prescription is 10-14 which indicate polypharmacy.

Table 4: Assessment of drug use pattern using WHO prescribing indicators.

Sl no	Prescribing indicators assessed	Percentage	WHO standard
1	Average number of drugs per encounter	1.4	1.6-1.8%
2	Percentage of drugs prescribed by generic name.	15%	100%
3	Percentage of encounter with antibiotics	10%	20.0-26.8%
4	Percentage of encounter with injection	60%	13.4-24.1%
5	Percentage of drugs from formulary	100%	100%

Table 5: Evaluation of prescription using Beers criteria.

Sl no	Category of prescription screened	Number of prescription	Percentage(%)
1	Inappropriate prescription	3	30
2	Appropriate prescription	7	70

From the above table it is clear that 3 prescriptions were inappropriate according to beers criteria. There was no drug –drug interactions found.In this study each prescription contains more than 5 medicines, this indicate the presence of polypharmacy. Drug therapy is most common and important treatment in elderly people. Most geriatric patients take medications for longer durations to control chronic conditions. In this study the data obtained analyse that the geriatric patients more in the age group 80-84(40%) and of male gender (40%). The prescriptions not in accordance with WHO standard. A total of 3 prescriptions out of 10 were found to be inappropriate according to beers criteria. No drug –drug interactions found. The presence of polypharmacy evident. Polypharmacy can be reduced by rational prescribing and improving medication adherence.

SUMMARY

The present pilot study depicts 10 patient cases out of 133 sample size, the data analysed insights that the prescriptions are not in accordance with WHO standard. Also presence of inappropriate medicines (30%) according to beers criteria and polypharmacy and no drug-drug interactions known. This outcome may vary during study progress period.

CONCLUSION

Our pilot study suggests that the current treatment practice in the hospital is associated with polypharmacy and the presence of potentially inappropriate medicines.

Further studies should include remaining patient data andthis study outcome may vary during the project progression.

ACKNOWLEDGEMENT

Authors would like to thank the research guide Mr. Nithin Manohar R, M.Pharm, (PhD), MSc Psychology, Associate Professor, Department of Pharmacy Practice, Pushpagiri College of Pharmacy, for his invaluable support, encouragement and supervision. They also express whole hearted gratitude to co-guide Dr. Jomin George Joseph, Assistant Professor, Department of Pharmacy Practice, Pushpagiri College of Pharmacy & also express thanks to Dr. Santhosh M Mathews, Principal, Pushpagiri College of Pharmacy.

REFERENCES

1. Nachiket Bhaveshaikh, Sangita Sukumaran, Upal Vyas, Drug prescribing patterns in elderly patients in a tertiary level hospital. Int J Basic Clin Pharmacol, 2017; 6(4): 759-764.
2. Febin Abraham, Gladis Varghese, Joseph Chandy Mathew, Phebina Mary John, Gloria K Sam. Drug utilization pattern among geriatric patients in a tertiary care hospital. Asian J Pharm Clin Res, 2015; 8(6): 191-194.
3. G. Sumithira, Amala Anilkumar, C.V. Habeeb Rahman, S.E. Bharanidharan. Drug utilization pattern in geriatric patients of General Medicine in a secondary care hospital. International Journal of Pharmaceutical Sciences and Research, 2019; 10(7): 3364-3372.
4. Kanagasanthos K, Topno I, Aravindkumar B. Prevalence of potentially inappropriate medication used and drug utilization pattern in elderly patients: a prospective study from a tertiary care hospital. Int J R in Med Sci, 2015; 3(8): 2062-72.
5. Fadare JO, Agboola SM, Opeke OA, Alabi RA. Prescription pattern and prevalence of potentially inappropriate medications among elderly patients in a Nigerian rural tertiary hospital. Ther Clin Risk Manag, 2013; 6(2): 115-20.
6. Veena DR, Padma L, Patil S. Drug prescribing pattern in elderly patients in a teaching hospital problem with medication use in elderly. Journal of Dental and Medical Sciences, 2012; 1(5): 39-42.
7. Thaveri BN, Patel TK, Barvaliya MJ, Tripathi CB. Drug utilization pattern and pharmacoeconomic analysis in geriatric medical inpatients of a tertiary care hospital of India. J Pharmacol Pharmacother, 2014; 5(4): 184-189.
8. Nayaka SR, Rajeshwari B, Venkatadri TV. Drug utilization pattern in geriatric inpatients of medicine department in a tertiary care teaching hospital. Int J Basic Clin Pharmacol, 2015; 4(3): 568-73.