

Assessment of Potentially Inappropriate Medication in Elderly Patients at Basaveshwar Teaching and General Hospital.

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ABSTRACT

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The inappropriate prescribing (IP) is a major, public health problem in older people most often resulting from defective choice of medication by the prescriber. The present study was therefore entitled "Assessment of potentially inappropriate medication in elderly patients at our Basaveshwar Teaching and General Hospital. The Prospective observational study was carried out in the department of medicine the data was collected from the OPD cards of elderly patients. The total 150 patients was enrolled our study in which, 104 (69.3%) patients were males and 46 (30.6%) patients were female. It is observed that more number of patients were found in the age group of 65to74 is 94 (63.67%). The study shows that 57 numbers of (38%) prescriptions and 77 numbers of different drugs were reported to prescribe inappropriately. Among them Alprazolam (10.39%), Cimetidine (7.79%), Naproxen, Diazepam, Phenobarbitone (6.50%), Chlordiazepoxide, Ferrous sulphate, Hydroxyzine (5.20%), Cyproheptadine, Piroxicam, Cyclandelate, Chlordiazepoxide and Amitriptyline, Hyoscyamine, Amiodarone, Bisacodyl (3.89%), Nitrofurantoin, Digoxin, Fluoxetine, Orphenadrine, Ketorolac, Doxazosin & Nitrofurantoin (2.60%). The more number of inappropriateness was found in the age group of 65 to 74 that is in 33 prescriptions (57.90%) followed by 75 to 84 that is 21 (36.84%). and very few cases was found in the age group ≥ 85 that is 03 (5.26%).

Keywords: Inappropriate prescribing, Elderly, Out patients.

INTRODUCTION

The elderly population is one of the most rapidly increasing populations in the world. Physiological alteration induced by the ageing process make these individuals more susceptible to chronic diseases and consequently, to increased drug utilization.¹ Population aging is considered as the most serious problem in developed countries and is going to be a threat for developing countries. Aging is associated with various physiological changes and multiple diseases like diabetes, hypertension, arthritis which alter the pharmacological response to a drug. Moreover, elderly people are more sensitive to frequently used drugs like NSAIDs (Non Steroidal Anti Inflammatory Drugs), Benzodiazepines, opioids etc. All these factors alter the drug response resulting in adverse drug reactions (ADRs) and hospitalization consuming 40% of health service expenditure in developed countries. Hence it is mandatory for physicians to be aware of normal age related physiological and pharmacological changes taking place in old people. This will help to avoid irrational prescribing, minimize ADRs and

maximize benefits of drugs in elderly patients. Above all, educating the old patients and their care providers regarding the importance and proper use of drugs to their well being is necessary to improve adherence. Hence setting therapeutic guidelines for treating elderly patients will enhance their quality of life.² The problems are more likely in elderly patients, in part because of age related changes in pharmacokinetics and pharmacodynamics, reduced organ reserve capacity, multiple medical conditions, and the number of medications taken. Evidence indicates that physicians often prescribe medications that have an increased potential for causing harm to elderly patients.³

The Prescription of medicines is a fundamental component of the care in elderly people. Several characteristics of ageing and geriatric medicine affect medication prescribing for these people and render the selection of appropriate pharmacotherapy as a challenging and complex process.⁴

The higher incidence of chronic diseases and degenerative pathologies increases demand for prescription medicines to treat these conditions, alleviate pain, and provide quality of life and well-being, which renders older adults susceptible to the risk of polypharmacy and drug-related illnesses. Elderly people consume more medicines than the general population and this trend increases with age, which increases the probability of interactions among several medicines and

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consequently a major number of adverse effects have been associated with disabling conditions. The inadequate and inappropriate use of medicines and prescription patterns raise unnecessarily the cost of health care.⁵ Present study analyzes prescriptions of elderly patients to analyse the use of potentially inappropriate medication followed by Beers Criteria.⁶

MATERIALS AND METHODS

Study Site:

The study was carried out at outpatient department (OPD), HKES's Basaveshwar Teaching and General Hospital (BTGH), Gulbarga, which is a 765 bedded tertiary care hospital.

Study design:

- A hospital based prospective study.

Study duration:

- Study was carried out for a period of 8 months.

Study criteria:

- Elderly patients were enrolled by taking their consent into the study by considering following criteria

Inclusion Criteria:

- Elderly patients visiting OPD of medicine.
- Patients of above 65 years age and of either sex.
- Patients who were willing to participate in the study.

Exclusion criteria:

- Patients of below 65 year age.
- Patients who were not willing to participate in the study.

Source of data:

- OPD cards of elderly patients visiting to Basaveshwara teaching and general hospital Gulbarga.

Ethical Clearance:

The study was approved by Institutional Ethics Committee and issued ethical clearance certificate before conducting the study.

Informed Consent Form:

A patient informed consent form was prepared and from the selected patients, the informed consent was obtained and enrolled into the study.

Study materials:

The following study materials were prepared and used for the study.

Patient Data Collection Form:

A suitably designed patient data collection form was prepared by referring standard text books and journals, which include information of patient demographic details such as age, gender, education, and social status, duration of disease and medication history.

Study procedure:

Study was conducted at the Out Patient Department of medicine. The elderly patients visiting to BTGH were enrolled in the study considering the inclusion and exclusion criteria. Informed consent was taken from each patient at the time of enrolment in to the study. Details regarding demography, disease and treatment collected from the OPD cards of the patient in a specially designed patient data collection form and potentially inappropriate medication noted as per Beers criteria.

RESULTS

A total of 150 patients were enrolled, among them 104 (69.33%) were male and 46 (30.67%) were female. Out of 150 patients, 94 (62.67%) patients were between the age group of 65-74, 52 (34.66%) were 75-84 age group and 4 (2.67%) were ≥ 85 age group. 93 (62%) prescriptions were appropriate and 57 (38%) were inappropriate as per beer's criteria, in which 34 (59.65%) inappropriate prescriptions were of male and 23 (40.35%) were of female.

Study also reveals that inappropriate prescriptions of 33 (57.90%) patients were between the age group of 65-74 years, 21 (36.84%) were between 75-84 years and 3 (5.26%) were ≥ 85 age group

Table 1 : Gender Distribution of Elderly Patients

Sl. No.	Gender	No. of patients	Percentage
1	Male	104	69.33%
2	Female	46	30.67%

Table 2: Age Distribution of Elderly Patients

Sl. No.	Age	No. of patients	Percentage
1	65-74	94	62.67%
2	75-84	52	34.66%
3	≥ 85	04	2.67%

Table 3: Inappropriate Prescriptions as per beer's criteria

Sl. No.	Types o prescriptions	No. of prescriptions	Percentage
1	Appropriate prescriptions	93	62%
2	Inappropriate prescriptions	57	38%

Table 4: Gender Distribution of Inappropriate prescriptions criteria

Sl. No.	Gender	No. of prescriptions	Percentage
1	Male	34	59.65%
2	Female	23	40.35%

Table 5: Age Distribution of Inappropriate prescriptions criteria

Sl. No.	Age	No. of patients	Percentage
1	65-74	33	57.90%
2	75-84	21	36.84%
3	≥85	03	5.26%

Out of 77 class of inappropriate drugs, 20(25.97%) were reported like anxiolytics, 10(12.98%) NSAIDs, 7(9.09%) , antidepressant, anti-histamines, 6(7.79%) antacids, 5(6.49%) , cardiac drugs and anticonvulsants, 4(5.19%), vitamins and minerals ,other antihypertensive drugs, 3(3.89%) , Laxatives and purgatives, antispasmodic and peripheral vasodilators. In those inappropriate prescriptions, 8 times (10.39%) were alprazolam, 5 times (6.50%) naproxen, diazepam, phenobarbitone. In addition 4 prescriptions (5.20%) were chlordiazepoxide, ferrous Sulfate, hydroxyzian, 3(3.89%) lorazepam, bisacodyl, hyosamine, chloridiazepoxide, amitriptiline, cyclandelate, Piroxicam, cyproheptadine, 2(2.60%) nitrofurantoin, digoxin, fluoxetine, orphenadrine, ketoralac, doxazosin and nitrofurantoin has been reported.

DISCUSSION AND CONCLUSION

The study concludes to remind the physicians about side-effects of commonly prescribed medications when treating elderly patients. Explicit criteria should never be regarded as absolute prescribing guidelines, as physicians always have

Table 6. Classification of Drugs used in elderly

Sl. No.	Class of inappropriate drugs	No. of drugs	Percentage
1	Anxiolytics	20	25.97%
2	NSAIDs	10	12.98%
3	Antidepressant	7	9.09%
4	Antihistamines	7	9.09%
5	Antacids	6	7.79%
6	Cardiac drugs	5	6.49%
7	Anticonvulsants	5	6.49%
8	Vitamins and minerals	4	5.19%
9	Other antihypertensive	4	5.19%
10	Laxatives and purgatives	3	3.89%
11	Antispasmodic	3	3.89%
12	Peripheral vasodilators	3	3.89%

the freedom to choose the most appropriate medications for their patients. Ideally a group of local experts in geriatric care and pharmacology need to prepare explicit criteria for local elderly patients in a bid to avoid unnecessary adverse drug reactions.

To improve drug therapy for the elderly, health practitioners can take measures to reduce unwarranted use of medication and to optimize the benefits from important drugs. Further studies should be conducted to adjust lists of medications inappropriate for the elderly to the situation in developing countries, clinicians and students to meet the rising demand for quality physical therapy for this population. Incidence of drug-drug interactions in geriatric patients was frequent and pharmacist can play a critical role in managing medication therapy of patients with collaboration with other professional health care to prevent adverse drug reactions.

The study indicates the presence of polypharmacy in prescribing patterns irrespective use of potentially inappropriate medications among this vulnerable group. However there was compliance to recommend treatment guidelines for elderly patients. This study concludes that the overall incidence of inappropriate prescriptions was 38% which understand and informed that in our hospital the drugs prescribed as per the beer's criteria.

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