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EVALUATION OF DRUG USE PATTERNS IN GERIATRIC IN-PATIENTS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Aims and objectives: The goal of this study was to examine drug use patterns among geriatric in-patients at a tertiary care hospital. **Method:** An observational, prospective, study was conducted in a multispecialty hospital in Hyderabad, Telangana, India. A total of 150 elderly individuals from the in-patient general medicine unit at Aware Gleneagles Global Hospital who met the exclusion and inclusion criteria were selected for the 6-month study. All information about the research work has been gathered from in-patient case records as well as by associating with subjects and attendees of the subjects who are part of the research work with the help of doctors. **Results:** A total population of 150 people was analyzed, ranging from the age of 65 to above 91 years. Males accounted for 65.3% and females accounted for 34.6%. The majority of patients had respiratory tract system and CVS (29%) problems, subsequently CNS (15.34%). UTI (6%), GI and renal (9.33%) Hepato-biliary (5.34%), endocrine and oncology (4.66%), infectious (4%), hematological (2%), and the least was dermatology (68%). The more frequently prescribed drug in GI was pantoprazole (93.3%), in CVS it was Ecospirin (20%), in endocrine it was Thyronorm and metformin (4%), in the respiratory system it was Duolin (25.33%), and in the CNS it was levipil (4%). **Conclusion:** The information from the drug utilization pattern analysis would be useful in giving a good quality of healthcare to geriatric patients and aid in improving the rational use of medication.

KEYWORDS: Drug utilization evaluation, geriatrics, pantoprazole, Ecospirin.

INTRODUCTION

Medicines play a vital position in supplying better health care and have a critical impact on health. The main target of DUE at the various medical, social, and financial views of drug use.[1] Drug utilization is becoming more important for the aged; the major issue faced by these people is the wrong use of medication.[2] WHO and (INRUD) have set a lot of rules for the prescription of medicines used as indications to identify the prescriptions.[3,4]

Geriatrics is the department of medicine that handles the physiological characteristic of getting older and the analysis and therapy of sickness in the elderly.[5] A wide variety of medicines are taken by geriatric patients hence the occurrence of ADR is more in this age group.[6] The main motto is beyond the use of a greater number of drugs in the elderly because they are exposed to more diseases.

Polypharmacy will increase the threat of drug interaction, and also will lead to which lead to more prices for treatment.[7] Beer's standards can be used as an evaluation device for unsuitable therapy for elderly patients.[8] Prescription drugs for the elder people are more when compared to the younger ones about twice or thrice a day because of their chronic health issues.[9]

Practical aspects of prescribing for the elderly

Inappropriate prescription of medication is a frequent reason for morbidity in aged people. Common-senseregulationsforprescribingdonownolongerobservebesttotheaged, however, is specifically important in this sensitive group.

1. Take a complete medical history, which should encompass any adverse events and use of over-the-counter medicines.
2. Knowing the pharmacological activity of the drug prescribed.
3. Use the low therapeutic effective dose.
4. Use a less range of medication that affects a person's needs.
5. Consider the capacity for drug interactions and co-morbidity on drug response.
6. Drugs must seldom be used to treat signs without first coming across the signs (i.e., first diagnosis, the treatment).
7. Drugs must now no longer be withheld due to antique age; however, it must be remembered that there's no therapy for antique age either.
8. A drug must now no longer persist if it is not necessary.

9. It is rarely practical to deal with the complications of one drug with the way of means of prescribing another. In the aged, it is regularly essential to take care of such matters as the formulation of the drug. Generally, many elderly patients are more tolerant to elixirs and liquid drugs higher than that tablets or capsules. Management of drug-taking can be necessary, as an aged man or woman with a severe physical or mental disability can't be predicted to confirm any however the simplest drug regimen. Containers require specifically clean labeling and must be smooth to open–child-proof packing containers are regularly also grandparent-proof.[10]

MATERIALS AND METHODS

Study site: The research was carried out in medicine in the in-patient unit of Aware Gleneagles Global Hospitals, Hyderabad.

Design of study: On 150 in-patients in the internal medicine ward, a hospital-based prospective, observational study was conducted.

Sample size: 150 patients

Study period: 6 months

Study criteria

Inclusion criteria

1. Hospitalized in patients aged between 60 and > 91.
2. Patients of both genders.
3. Smoking and Alcoholic subjects
4. Subjects with and without co morbidities

Exclusion criteria

1. Patients below 65 years
2. Patients who are not willing to take part in the study
3. Actively in need of ICU admittance or on ventilators and those who were unable to talk were excluded
4. Out-patients
5. Pregnant women
6. Pediatric patients

RESULTS

A total population of 150 people was analyzed, ranging from the age of 65 to above 91 years. Males accounted for 65.3% and females accounted for 34.6% which were further segregated as 60-75 (82.6%), 76-90 (16.6%), and > 91 (0.6%). Of all the patients who were alcoholics, 44% were non-alcoholics, at 55%.

The percentage of smokers was 27.4%, and non-smokers were 72.6%. Among all the drugs (1236) prescribed, 105 were prescribed using generic names, and 1086 were prescribed using brand names. Fixed-dose combinations (FDCs) were 8.4% with about 105 drugs in combination.

Table 1: WHO classification of Age groups.

Geriatric age group		Number	Percentage %
65-75	Elderly	124	82.6%
76-90	Old	25	16.6%
>91	Very Old	1	0.6%

Out of total population 124 individuals belonged to age group of 65-75, 25 individuals belonged to age group of 76-90 and 1 individual belonged to age group of >91 years as shown in Figure 1.

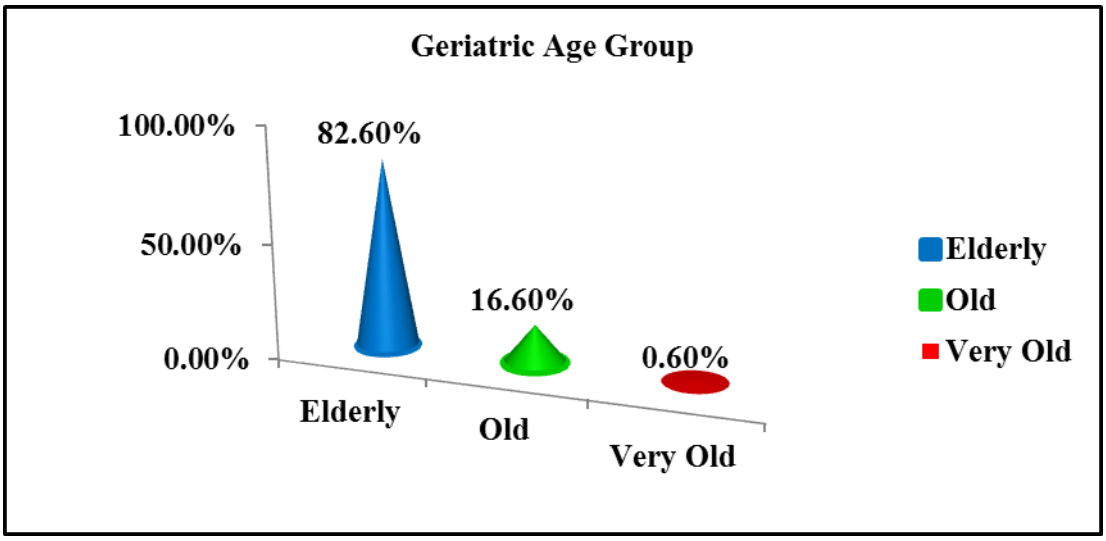

Figure 1: Distribution of subjects based upon WHO Classification of geriatric age group.

Table 2: Percentage of drugs used based on anatomical system involved.

System involved	Drugs percentage %
Gastro intestinal system	18.9%
Cardiovascular system	17.1%
Endocrine system	2.3%
Respiratory system	13.5%
Central nervous system	2.9%
Hepatobiliary system	0.8%
Renal system	1.5%
Urinary system	1.6%

The most commonly used drugs based on system involved is gastrointestinal drugs with a percentage of 18.9% followed by cardiovascular system with a percentage of 17.1% and respiratory system with a percentage of 13.5% as shown in Figure 2.

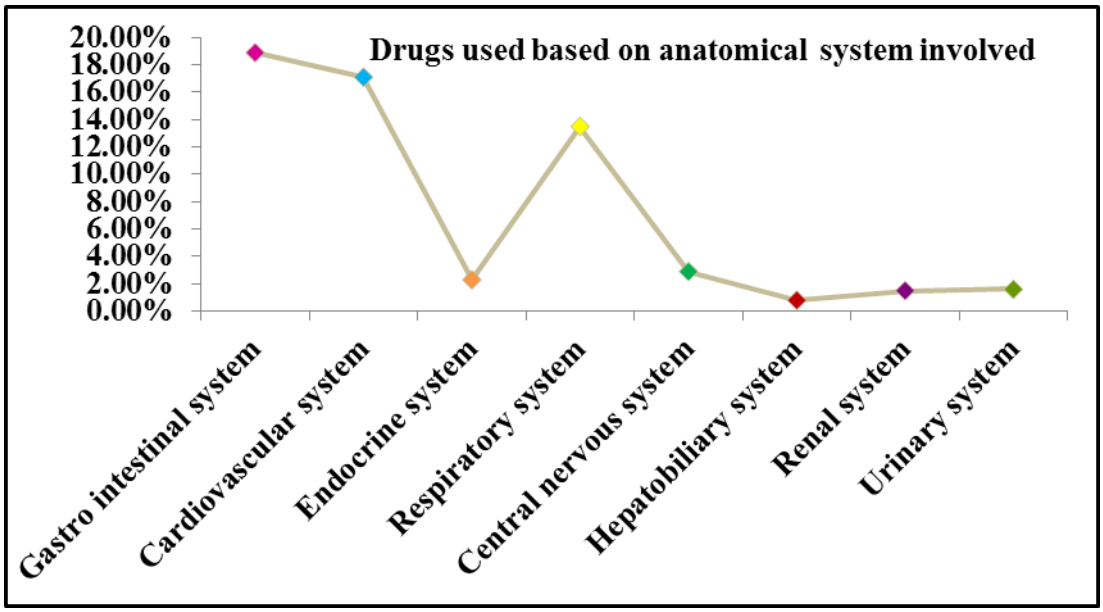

Figure 2: Percentage of drugs used based on anatomical system involved.

DISCUSSION

In the early studies there were only 34% of comorbidities and 66% of non-comorbidities conditions.[11] In the present study 34.66% of patients had only one co morbid condition, 31.34% of patients had two co morbid conditions and 34% of patients are having three co morbid conditions. The most common co morbid condition was acute exacerbation of COPD followed by hypertension.

Study was conducted for the elderly that is above 60 years of age. The age group between 60-65 years was found to be 58.65% in the study carried out previously.[12] In the present study

the majority of patients were between 65-75 years of age group 82.6%.

According to the study conducted by the sex wise distribution it showed that majority of the patients were male which was as high as 63%.The females accounted for around 37%.[13] In the present study; also there is a male preponderance by 65.3% as compared with female which is 34.7%.

In our study we found that 105 drugs (8.4%) were of fixed doe combinations and 91.5% were monotherapy. In the early studies there were a total of 2638 drugs, the percentage of drugs prescribed by generic names are 29% as fixed dose combinations and 71% of drugs were prescribed by brand name.[14]

Maximum number of patients were having respiratory disorders (57.6%), followed by kidney diseases (20.8%), cardiovascular diseases (18.6%) in the previous study.[12] Maximum number of patients was having respiratory disorders and cardiovascular system (19.33%) followed by central nervous system (15.34%), renal system and gastrointestinal systems (9.33%), urinary tract infection (6%), hepatobiliary system (5.34%), endocrine and oncology (4.66%), infectious disease (4%), hematologic (2%), dermatology (0.68%) in the present study drugs act on the respiratory system (n=189) were the most usually used drugs in study followed by drugs act on the GI system (n=130), antimicrobials (n=113), circulatory system(n=112), endocrine (n=83), and nutritional supplements (n=72) in the previous study.[15] In the present study drugs act on the gastrointestinal systems were the most commonly used drugs followed by cardiovascular system 17.1%, respiratory system 13.5%, central nervous system 2.9%, endocrine system 2.3%, urinary system 1.6%, and renal system 1.5%, hepatobiliary system 0.8%.

CONCLUSION

In our study, we have performed a prospective, randomized, observational study on geriatricsin Aware Gleneagles Global Hospitals, Hyderabad, to evaluate the drug utilization in geriatricin patients.

- In this the observational study was conducted on a sample size of 150 patients to evaluate the drug utilization. During the study, the patient's socio demographic details and the past medical history along with the present condition out of which majority of the patients were of the age group between 65-75 years.
- During the study, in our findings there was a male patient preponderance with 65.3% than

female patients with 34.6%.

- Duolin belonging to the class Bronchodilators was found to be the most commonly used Nebulizer in patients. Pantoprazole belonging to the class proton pump inhibitors was found to be the most commonly used followed by lasix belonging to the class diuretics and metformin belonging to the class biguanides.
- Respiratory disorders and cardiovascular system disorders were more usual with a percentage of 19.3% accompanied by Central Nervous System 15.34% followed by Renal system of 9.33% and so on.
- Associated Co-morbidities with more than 3 were of 34.66% followed by two co morbidities of 31.34% and with one Co-morbid condition about 34%.The average hospital stay of the patients was 50.66% with 3-5 days, 24.67% with 6-10 days 20.67% with 1-2 days and the least was 4% with above 10 days hospital stay.
- Out of 1236 drugs 12.11% were generic drugs. Intravenous formulation was about 38.1%, Oral formulation was 54.37% and Topical with a percentage of 0.57% followed by others 6.15%.
- Out of total of 1236 drugs that were prescribed 105 drugs were of fixed drug combinations.

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