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A STUDY ON PRESCRIBING PATTERN OF DRUGS AMONG GERIATRICS IN A TERTIARY CARE TEACHING HOSPITAL

Thangamani S¹, Akhila Das¹, Alma rose devasya¹ Harikrishnan K.P¹, Riya Ann James¹, Dr Kiran³

¹Department of Pharmacy Practice, Grace College of Pharmacy, Kodunthirapully Palakkad, Kerala, 678004, India.

²Department of General Medicine, Karuna Medical College Hospital, Chittur, Vilayodi, Palakkad, Kerala, 678004, India.

ABSTRACT

Polypharmacy and inappropriate use of medicines in the elderly have been identified as major types of non rational prescribing in the elderly leading to higher prevalence of adverse drug reactions among them. Rational use of medicine is essential in elderly patients as it can improve the quality of life and prolong the life span. The aim of the study was to study the prescribing pattern of drugs among geriatric population. A prospective observational study was conducted in General Medicine OPD & IPD at Karuna Medical College, Vilayodi, Chittur, for a period of 6 months. The study is based on the data collected from 202 Geriatric patients. A total of 202 elderly patients were included in the study. Polypharmacy was also observed in majority of the prescriptions that were prescribed to patients. The major diagnosis observed in the study population were infectious diseases (16.83%) followed by cardiovascular disorders (13.36%), respiratory disorders (12.87%), neurological disorders (11.88%) and musculoskeletal disorders. The commonly prescribed category of drugs to the elderly patients were Antihypertensive, Gastrointestinal drugs, CVS drugs, Antibiotics, respiratory drugs, analgesics, antihyperglycaemics, drugs acting on CNS, anticoagulants, antihistamines, vitamins, electrolytes and steroids. The incidence of several chronic illnesses in older population is a common occurrence worldwide leads to poly-pharmacy. This indicates that there is a need for multidisciplinary, multifaceted & multisector approach which may improve drug safety & adherence in the elderly.

Key words: Geriatrics, Prescribing Pattern.

INTRODUCTION

Geriatrics is a branch of medicine that is concerned with the medical and social aspect of health and illness in elderly. The term elderly generally refers to people aged 65 years and above. However, the physiological changes associated with ageing occur gradually over a lifetime, with significant patient-to-patient variability; so the choice of '65' year is arbitrary [1]. By 2025, the geriatric population is expected to be 840 million in the developing countries. In 2010, India had more than 91.6 million elderly and the number of elderly in India is projected to reach 158.7 million in 2025. One of the most pressing problems facing public health providers and administrators in many countries is the rational use of drug [2].

Polypharmacy and inappropriate use of medicines in the elderly have been identified as major

types of non rational prescribing in the elderly leading to higher prevalence of adverse drug reactions among them [3]. Rational use of medicine is essential in elderly patients as it can improve the quality of life and prolong the life span. Physicians face the challenge of prescribing medications safely in older adults with multiple disorders, balancing the complex trade of between restricting the number of drugs prescribed and using all medications that may be beneficial which requires extra attention in assessment when prescribing [4]. It is well known recorded fact that the probability of efficacious and safe usage of drugs increases when the patient are informed properly regarding the drug and their uses. The requirement of rational use of drugs is that the patients receive drugs in accordance to the clinical needs in appropriate doses that takes into considerations their individual requirement for

Corresponding Author :- **Akhila Das** Email:- akhiladasammu@gmail.com

appropriate time, at least at the least possible cause as defined by WHO. The identification of the quantity and type of prescribing problems are fundamental first steps in prime to improve the quality of prescribing and medication safety. These require that rational drug prescribing be promoted and potentially dangerous prescribing patterns be detected quickly and discouraged [5]. By keeping all these issues in mind a study was carried out in Karuna Medical college to determine the prescribing pattern of drugs among elderly patients (>65 years).

METHODOLOGY

A prospective observational study was conducted in the Department of General Medicine at Karuna Medical College Hospital, Palakkad in 202 inpatients/outpatients for a period of 6 months. Approval of the Institutional Ethical committee was obtained prior to commencement of the study. Inclusion criteria: geriatric population having >65 years of age. Exclusion criteria: patients < 65 years, patients not willing to participate, patients with diseases like chronic kidney disease and cancer. Data collection form was designed to aid collection of data. Data on age, sex, number of medications per prescription, dose and duration of prescribed drugs were obtained. The pattern of prescription of drugs was assessed.

RESULTS

A total of 202 patients met the inclusion criteria.

The demographic characteristics of the geriatric patients were shown in fig 1. out of 202 prescription studied, 111(54.95%) belong to males and the rest 91(45.04%) belong to female.

Figure 2 shows the number of drugs prescribed in each prescription was evaluated. It was found that 16.33% of the prescription had 1-4 drugs, 57.92% had 5-9 drugs, 22.27% of the prescriptions had 10-14 drugs and 3.46% prescription had 15-19 drugs. Polypharmacy was also observed in majority of the prescriptions that were prescribed to patients. The major diagnosis observed in the study population were infectious diseases (16.83%) followed by cardiovascular disorders (13.36%), respiratory disorders (12.87%), neurological disorders (11.88%) and musculoskeletal disorders (10.89%) as shown in table 1. In this study it was observed that a total of 1737 drugs were prescribed to 202 patients. The major categories of drugs in prescriptions were antimicrobials agents 314 drugs (18.07%), drugs acting on gastro intestinal system 261 drugs (15.02%), analgesics 243 drugs (13.98%), antihypertensives 199 drugs (11.45%) and others as shown in table 3. The commonly prescribed category of drugs to the elderly patients were Antihypertensive, Gastrointestinal drugs, CVS drugs, Antibiotics, respiratory drugs, analgesics, antihyperglycaemics, drugs acting on CNS, anticoagulants, antihistamines, vitamins, electrolytes and steroids as shown in fig 3.

Table 1. Major Diagnosis Observed In The Study Population (n=202)

Disease group	Specific condition	No of patients	Percentage(%)
CVD	• Ischemic heart disease	4	13.5
	• Peripheral vascular disease	2	
	• Heart failure	3	
	• Hypertension	12	
	• Hypercholesteremia	6	
		Total=27	
Neurological	• Stroke	7	12
	• Parkinsonism	6	
	• Epilepsy	2	
	• Peripheral neuropathy	3	
	• Radiculopathy	1	
	• Myasthenia gravis	1	
	• Trigeminal neuralgia	2	
	• Dementia	2	
	Total=24		
Musculoskeletal	• Rheumatological conditions	7	11
	• Osteoporosis	8	
	• Gout	2	
	• Fractures	5	
	Total=22		
Endocrine/metabolic disorders		17	8.5
Infectious diseases		34	17
Blood diseases		4	2
GI disorders		8	4

Respiratory disorders		25	12.5
Hepatic disorders		8	4
Renal disorders		5	2.5
Dermatological disorders		6	3
miscellanious		20	10

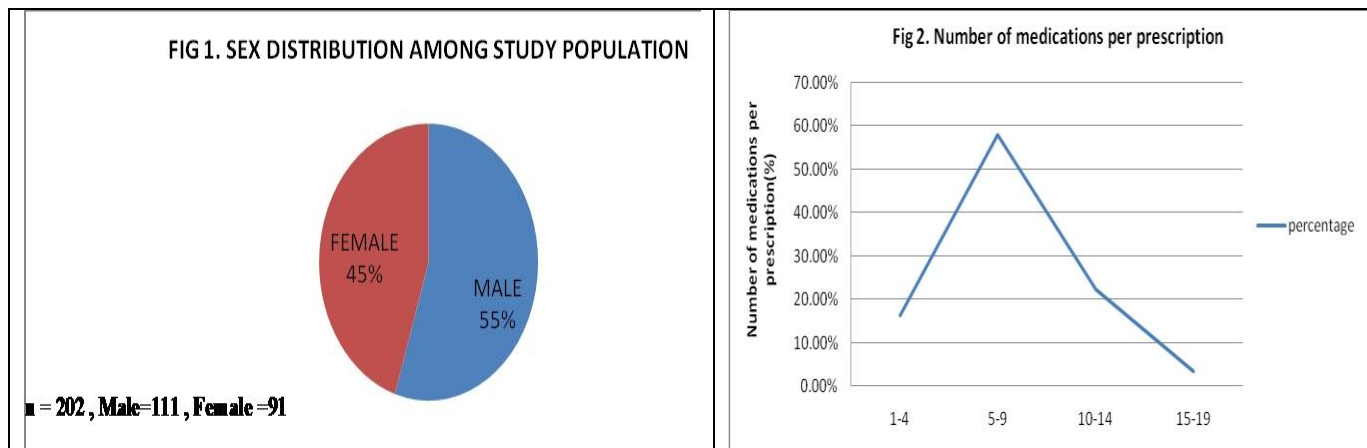
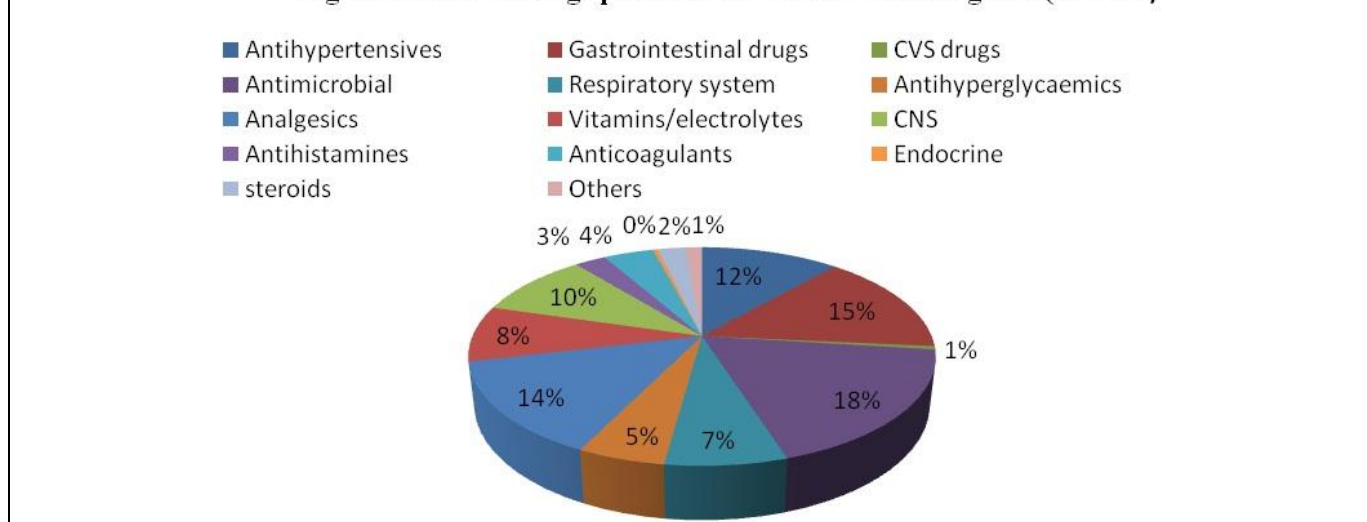


Fig 3. Number of drugs prescribed from different categories(n=1737)



DISCUSSION

There is no doubt that there is rapid ageing of population throughout the world. According to the 66th World Health Assembly organized by the WHO at Hague in May 2013, there would be an increase from 11% in 2000 to 22% in 2050 in the proportion of people aged over 60 years. This study was undertaken with the goal of gaining an understanding of the drug utilization patterns in this study group [5].

The data was collected from 202 patients using specially designed data collection form. out of which 111(54.95%) were males and 91 were Female patients.

Hence the majority of drug utilization was by males.

Prescribing pattern of drugs reflects the clinical judgment of clinicians. Our study revealed poly pharmacy

in geriatric patients.83.66% of drugs was having polypharmacy. Similar data was found in some other studies carried out by Joshi et al. [9] in Nepal and Veena et al. [7] in India where the incidence was 73% and 88.67% respectively. Poly pharmacy unfortunately is very common in India and some other countries. It results in increased cost of treatment, which may lead to non-adherence by patients as they have more medicines than they can cope with. It also increases the risk of significant adverse drug interaction. It may be advisable for pharmacists to discuss the availability at once daily, single tablet, fixed dose combinations to reduce pill burden and improve adherence [5].

The elderly population suffers from numerous chronic disorders. In this study, maximum of diagnosed cases were infectious diseases (28%), followed by

cardiovascular Disorders (18.75%). Respiratory diseases like COPD, asthma were the most common reasons for hospital admission. The prevalence of infectious disease may be due to the study was conducted at a hospital in rural area where people are less educated and is less conscious about hygiene. Veena et al [7] conducted a study among the elderly at Bangalore reported that respiratory and cardiovascular diseases were shown to be the predominant reasons for admission.

This study revealed the use of many therapeutic groups among the elderly. Antimicrobials were the most frequently prescribed drugs. The next most frequently prescribed group is most prescribed therapeutic group is Gastro intestinal drugs followed by analgesics.

The fourth most prescribed therapeutic group is the cardiovascular drugs among which anti-hypertensive most frequently were prescribed. The incidence of hypertension in the geriatric population is very high and is significant determinant of cardiovascular risk in this group. The tendency for blood pressure to increase with age may depend on environmental factors such as diet, stress and inactivity. Senescent changes in the cardiovascular system leading to decreased vascular compliance and decreased baroreceptor sensitivity contribute to rising blood pressure. The hallmark of hypertension in the elderly is increased vascular resistance [6].

Antipsychotics were the fifth most prescribed medicines. Vitamins/Minerals were the sixth most prescribed medicines. The high occurrence of vitamin and other health supplements in the prescription were not surprising as many people don't consume an optimal amount of all vitamins by diet alone. Pending strong evidence of effectiveness from randomized trials, it

appears prudent for adults to take vitamin supplements. Physicians should make specific efforts to learn about their patient's use of vitamins to ensure that they take only the vitamins that they should [10, 11].

CONCLUSION

The incidence of several chronic illnesses in older population is a common occurrence worldwide leads to poly-pharmacy. The study reports shows that majority of drug utilization was my male patients. Prevalence of polypharmacy was high and is usually unavoidable in the elderly. This indicates that there is a need for multidisciplinary, multifaceted & multisector approach which may improve drug safety & adherence in the elderly.

Before dispensing a medicine to the geriatric patient, the pharmacist should play an important role in assessing the appropriateness of the prescription so that the quality and efficacy of medical care given to geriatrics can be increased. Pharmacists can also discuss with the physician about drugs and suggest a better and a safer alternative to the geriatrics so that a proper decision is made regarding the right choice of a drug.

Apart from providing very useful baseline data, this study also effectively demonstrates the prescribing patterns of drugs in the geriatric patients and the use of drugs among these patients in a tertiary care hospital palakkad.

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Nil

CONFLICT OF INTEREST

No interest

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