

RESULTS: 26 Patients (8.6%) received < 4drugs; 138 Patients (46%) received 5 -9 drugs; 136 Patients (45%) received 10 -14 drugs; p value < 0.001.

CONCLUSION: A significant proportion of hospitalized geriatric patients are exposed to substantial polypharmacy. Further researches are required to identify the risk of adverse drug effects following multiple drug administration and specific potential drug-drug interaction.

KEYWORDS : Elderly patients, Geriatrics, Polypharmacy.

INTRODUCTION:

As per the "National policy on older persons" adopted by the Government of India in January 1999, a person who is of age 60 years or above is described as elderly or geriatric person.⁽¹⁾Aging is a natural process. It seldom comes alone and is often being accompanied by chronic diseases, comorbidities, disabilities and social isolation. Multi-morbidity leads to the use of multiple drugs, a condition known as poly-pharmacy.⁽²⁾ Poly' is a Greek word meaning more than one and 'Pharmacy' is a Greek word meaning the drug – Pharmacon.⁽³⁾ The use of five or more medications is called as polypharm acy.^(4,5)There are more possibilities for drug- drug interactions, medication non-adherence and adverse drug reactions when 5 or more medicines are taken concurrently.⁽⁶⁾

Polypharmacy is frequently associated with inappropriate prescribing. ⁽⁷⁾Though the potential risks of polypharmacy are evident, so are the benefits. However, balancing the risks and benefits of multiple therapies can be challenging, Rational prescription improves quality use of medicines by reducing polypharmacy and the burden of medicines, correcting underuse of medicines and reducing inappropriate prescribing.⁽⁸⁾

The consequences of polypharmacy in elderly patients have already been documented in western countries by many researchers. However in India particularly in the southern parts, these studies are very limited. Hence an attempt is made to evaluate the prevalence ofpolypharmacy among the elderly patients in a tertiary care hospital in the southern region of Tamilnadu.

MATERIALS AND METHODS:

STUDY DESIGN: Prospective, Observational study STUDY DURATION: Six months duration October 2016 – March 2017

METHODOLOGY: This study was conducted in the inpatient department of medicine, surgery, obstetrics and gynecology wards of Government Theni medical College and Hospital, after obtaining Institutional ethical committee clearance. Both males and females of age 60 years and above were included in this study. A total of 300 patients were enrolled. Patients who were admitted repeatedly, patients admitted in ICU, patients with carcinoma were excluded from the study. Patients who were discharged against medical advice were also excluded from the study.

The case sheets of the patients with the above said criteria were collected. Information regarding name, age, sex, diagnosis, number of

drugs administered, name of the drugs administered were recorded. Based on the definition given by Kauffamn, polypharmacy was grouped as follows -1) < 4 drugs 2) 5-9 drugs 3) 10 -14 drugs 4) >15 drugs. Statistical analysis was done using Chi-Square test, and P value <0.05 was considered to be statistically significant.

RESULTS:

Out of 300, 194 were males,106 were females. 198 patients were between 60-69 years;66 patients were between 70 - 79 years;32 patients were between 80 - 89 years; Four Patients were between 90 - 100 years (Table-1). 26 Patients (8.6%) received < 4drugs; 138 patients (46%) received 5-9 drugs; 136 Patients(45%) received 10 -14 drugs; 0 Patients received >15 drugs; (Table-2). Totally 274 patients (91%) received more than 5 drugs. Of the drugs prescribed, NSAID's like acetaminophen, Ibuprofen ,antibiotics like Ampicillin, Cefotaxime,Ceftriaxone, Gentamicin, anti-hypertensives like Enalapril, Frusemide, Amiloride, Metoprolol, Amlodipine and hypoglycemic drugs like Insulin, Metformin, Glimepiride were the commonly prescribed drugs.

DISCUSSION:

From this study it is evident that most of the elderly patients admitted to the hospital for various reasons were prescribed more than 4 drugs which come under polypharmacy. S. Lane Slabaugh et al. have also quoted that polypharmacy is also evident among elderly patients in their study⁽⁹⁾. An 89% prevalence of Polypharmacy was found in a study conducted by Salih Bin Salih et al.⁽¹⁰⁾, which is almost close to our study and is extremely high compared to other studies. For example, it was 10% in the German study of primary practice health insurance database⁽¹¹⁾,33% in Denmark in a population-based general practice prescription data base⁽²⁾, 46% in Italians above 65 years⁽¹³⁾, 47% among geriatric patients in Norway⁽¹⁴⁾ and 57% in geriatric patients in Sweden⁽¹⁵⁾. The reason for the high level of Polypharmacy among the elderly patients recorded by us may be because of the study place, which is a tertiary care center, where most patients are referred because of complicated diseases or multiple morbidity. The other reason may be all medications and supplies in our center are completely free of charge, so that they are easily available for the patients.

The level of polypharmacy exposure found in this study raises patient safety concerns and the relationship between polypharmacy and adverse drug events has been documented for adults in both hospital and nursing home settings^(16,17). Hence prescribing authority should be aware of the possible drug-drug interactions among the commonly

prescribed drugs. Various CME programs could be conducted periodically to enhance the knowledge of the drug prescribers regarding the possible and potential drug - drug interactions. Further studies are required to detect potentially adverse drug-drug interactions especially for elderly patients with complex chronic conditions, who are at higher risk of polypharmacy⁽¹⁸⁾. Further researches are required to identify the risk of adverse drug effects following multiple drug administration and specific potential drugdrug interaction.

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Table 1: Age wise distribution

AGE(years)	61-70	71-80	81-90	91-100	TOTAL
MALE	120	48	22	4	194
FEMALE	78	18	10	0	106
TOTAL	198	66	32	4	300

Table2: Number of patients on different drugs

	Group I (<4 drugs)	Group II (5-9	Group III (10-14
		drugs)	drugs)
Male	12	86	90
Female	14	52	46
Total	26	138	136

p value < 0.001.(statistically significant)

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