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IMPROVING PHARMACEUTICAL CARE AND HEALTH OUTCOMES IN OLDER ADULTS: AN EVIDENCE BASED REVIEW

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ABSTRACT

Older people are rapidly increasing in number throughout the world, in both developed and developing countries and among this age group multiple chronic and degenerative disorders are highly prevalent. Lack of pharmaceutical care programme is a major public health problem in older adults resulting in negative health outcomes. The physiological alterations and lifestyle modifications in elderly lead to more health issues/ diseases. This leads to Polypharmacy (more than 5 drugs use) and non-compliance to their medications. The primary objective of this review was to provide an updated summary of evidence from different interventional studies to determine whether intervention aimed at improving pharmaceutical care also improve health outcome of older adults. The review aimed to measure the outcome of a harmonised, structured pharmaceutical care provided to elderly patients (> 60 years of age) by a clinical pharmacist. The use of multiple medications was associated with increased risks to patients, thus the pharmacist's role has been directed at reducing the number of medications in order to reduce the potential for adverse effects and to minimise costs. Pharmaceutical care requires a comprehensive patient assessment which focuses not only on the drug product but the net benefit of patients are deriving from their medications. Pharmaceutical care plays a crucial role in reducing mortality and morbidities of the patients.

KEYWORDS: Pharmaceutical care, intervention, health outcome.

INTRODUCTION

Elderly patients often receive care from several doctors which makes the scheme of pharmacotherapy more complicated. This is overlapping with the effect of over the counter

medications and dietary supplements self-treatment, which additionally increases the risk of drugs problems. Clinicians are spending large proportions of their time in the management of drug dosage regimens in older adults, and knowledge of geriatric prescribing, clinical pharmacology and clinical pharmacy has become essential in daily clinical practise.[1] Older people have substantial inter individual variability in health, disability, age-related changes, poly morbidity and associated poly pharmacy making generalisation of prescribing recommendations difficult.

Medication use in older patients in often in appropriate and erroneous, partly because of the complexities of prescribing and partly because of many patient, provider and health system factor that substantially influence the therapeutic value of medications in aged people. The goal of medication therapy is to achieve beneficial therapeutic outcomes and quality of life while minimising risk to patients.

Pharmaceutical Care

Helper and Strand defined pharmaceutical care as the responsible provision of drug therapy for achieving definite outcomes that improve patients quality of life.[2] The International Pharmaceutical Federation, (FIP) in 1998 adopted this definition but with the following amendment: to improve and maintain a patients quality of life.[3] Pharmaceutical care (PC) reflects a systemic approach aimed at ensuring that patients get the right medications at the right time and for the right reasons.[4] This underscores the concept of rational drug use. Cipolle described it as, a practice in which the practitioner takes responsibility for patients drug-related needs and is held accountable for this commitment.[5] This later definition brings to the fore the philosophy of practice, patient care process, and practice management system. The ultimate goal is to achieve pre-defined medication related outcomes and hence improve the individuals health related quality of life. These outcomes include cure of patients diseases, elimination, or reduction of a patients symptoms, arresting or slowing a disease process or preventing a disease or symptoms.[2]

Pharmaceutical care implementation into everyday practice is vital to promote the best therapeutic outcome by pharmacist evaluation in the patient's drug- related needs corresponding to 1. Finding and minimizing of potential drug interaction, 2. Documenting of ADR 3. Provide counseling 4. Execution & Support to the health care professional in their individual therapeutic management.[6]

Health Problem in Geriatrics

While prescribing medication to elderly, physician need to consider that pharmacokinetic (what the body does to the drug) and pharmacodynamics (what the drug does to the body physiologically) profiles which are different for elder peoples when compared with young individuals. Elderly patients present high alterations in all pharmacokinetic processes such as absorption, distribution, metabolism, excretion. The pharmacokinetic alterations will leads to reduction in efficacy of some drugs and may also increase the risk of ADE when compared to younger adults. For example, antipsychotic drug use among elderly can induce Parkinsonism, tardive dyskinesia, anticholinergic effects, cardiac conduction abnormalities, cognitive dysfunction etc. Among geriatrics, absorption and distribution are reduced than younger individuals due to reduction of total body water (10-15%), and serum albumin level will be reduced to 1/3 of total concentration. The degradation and biotransformation of drugs in the liver is also slower among elderly because of significant changes in liver physiology and functionality that are associated with ageing.[7] Liver volume and blood flow through hepatocytes will be reduced in elderly, hepatic clearance of drugs is also reduced, particularly drugs oxidised with microsomal P450-dependent system. Renal function will also decline gradually with reduction of GFR with decrease in functional renal reserve.

Drug Related Problem

Drug-related problem (DRP) can be defined as: 'an event or circumstance involving drug therapy that actually or potentially interferes with desired health outcomes'. In this point of view, a potential problem means a circumstance that may consequence in drug-related morbidity or fatality if no exploit is carried out; an actual problem is marked with signs and symptoms.[8] It should be differentiated now that the use of the appearance problem in the phrase, drug-related problem is used to specify a drug related incident bendable to recognition, healing, or more aptly, avoidance, and should not be understood in the regular usage wherever it softly gives the thought that, something (mystery, inconsistency, confusion) is incorrect here.[9] The very important element of this explanation is the consequence of the problem on the health-end effect of the pharmacotherapy. There is no drug-related problem if there is no possible persuade.[10] A DRP arises when patient occurrences or is likely to experience whichever a disease or symptom having an exact or unspecified association through drug therapy.[11] Charles and Linda (1990) categorized DRPs into following eight categories; untreated indications, improper drug selection, sub-

therapeutic dosage, failure to receive drugs, over dosage, adverse drug reactions, drug interactions, drug use without indication.

Geriatrics and Medication Use

The physiological alterations and lifestyle modifications in elderly leads more health issues/ diseases, intern leads to the use of more drugs/Polypharmacy (more than 5 drugs). Several studies showed DRP was the third to fourth leading cause of death in the elderly and can also cause disability, depression, gait disturbances, and fall. It is widely assumed that use of multiple medications is associated with increased risks to patients, thus, the pharmacist's role has been directed at reducing a number of medications in order to reduce the potential for adverse effects and to minimize the costs. Pharmaceutical care requires a comprehensive patient assessment which focuses not only on the drug product but also the net benefit to the patients were deriving from their medications. The process of identifying and resolving DRPs can be quite complex and involve a multitude of factors beyond simply reducing the number of medications Hence, the pharmacist presence in family physician offices, hospitals will help to the physicians to reduce the DRP (Inappropriate medication) and polypharmacy.[12]

Inappropriate medication use in the elderly population is expected to result in decrease health care quality, by evoking of new symptoms and Nonadherence.[13] Medication non-adherence is defined as the inability of the patients (older) to manage their medications and is a widespread problem in geriatrics. The prevalence rate of non-adherence ranges from 40% to 80% of patients.[14]

The adverse drug effects in the elderly population can be cut and perhaps prevented by the physician anticipating the effects of drug toxicity and understanding how the patient's age and health status will likely affect drug dosing. Drug–drug interaction can occur when two or more drugs are used but usually have no demonstrable adverse consequence.[15] A pharmacist intervention/ provision of various pharmaceutical care services to geriatric patients at old age homes/community/hospital helps known to reduce medication-related problems, improvement in Medication adherence status and enhancing the quality of life of geriatric patients.[16]

Need of optimisation of drug therapy in elderly

Inappropriate prescribing can cause substantial morbidity and represents a clinical and economic burden to patient and society.[17] Therefore inappropriate medication use in elderly

thus becomes an important health issue globally. Optimisation of drug prescribing in geriatric population is having prime concern due to significant clinical and economic impact of therapy. Elderly peoples on medication for a particular disease indication are said to be appropriate if the therapy show clear evidence based indication and cost effectiveness. Similarly, medicines that are potentially inappropriate if therapy show no clear evidence based indication. Changing prescribing behaviour such as PIP is a complex and challenging task. Several strategies have been used to alter prescribing practices with variable results, with no one interventional strategy proving to be consistently effective.[18]

CONCLUSION

One of the recent prospective study carried out to know the impact of clinical pharmacists' interventions concluded that the impact of clinical pharmacist providing patient counseling had a positive impact on medication adherence and quality of life. The best thing found during the review was that the interventions undertaken by the pharmacists were well received and accepted by the working physicians in the hospital symbolizing that the health care system were patient centered.[19]

The most frequently identified DRPs were drug interactions followed by overdosage and drug duplication. Polypharmacy and diabetes mellitus were identified as important clinical risk factors for DRPs. Routine medication review and reactive pharmacist intervention were strongly recommended to improve the treatment outcome of patients.

For successful pharmacotherapy of any medical illness, medication adherence is an important factor. If and only if the patient is completely adherent to the medications prescribed, a successful outcome of the therapy can be achieved. It was observed from the review that, using MMAS, majority of the patients, i.e. 85%, were well adherent to the medication which is an important criteria for the good treatment.

A physician –pharmacist collaborative practice can help to improve the patient health and functioning by providing good patient counselling. By taking into consideration the individual patient's present conditions, the pharmacist can help them take necessary step towards a better lifestyle and improved medication use. The pharmacist can take innovative step regarding the patient's dietary pattern and other essential modification by discussing it with physician and both of them together can lead to better monitoring of the drug therapy of

the patient. Compared with usual care provided by physician only, the physician-pharmacist pharmacological screening, education and monitoring.

Clinical pharmacist's interventions are successful in identifying and rectifying the different types of drug related problems occurring in geriatric patients. As there was a greater acceptance of the pharmaceutical care interventions a joint effort between clinical pharmacists and other health care professionals will provide a safer system of patient care and better utilization of resources. Hence there is a need for clinical pharmacists in the general wards to improve rational drug use and to give input to the physicians at the time of prescribing.[20]

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