

Prevalence of Diseases and Pattern of Medicine Used by Retired Armed Forces Personnel Attending at a Military Hospital

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Abstract

Introduction: Retired armed forces personnel constitute a large group of population whose treatment is ensured by the armed forces. Their disease prevalence and medicine use pattern will help the authority to take more effective decision for managing their ailments.

Objectives: To observe the medicine use patterns and disease prevalence among retired armed forces personnel.

Materials and Methods: This cross-sectional prescription evaluation was carried out on 546 prescriptions obtained from Others Rank (ORs) Pharmacy of Combined Military Hospital (CMH), Dhaka from mid June to mid July, 2020. According to World Health Organization's (WHO) core prescribing indicators analysis, number of drugs/prescription, percentage of drug written in generic name, percentage of prescription with an injection, percentage of prescription with antimicrobials and percentage of prescription containing local purchase drugs were calculated.

Results: All the patients were male and their age ranges from 38 to 84 years with mean age of 58.6 years. Half of the patients were in 55 to 64 years age groups. About 43% patients had two chronic diseases. The average number of drugs per prescription was 5.3 drugs. Patients with single disease required less number of drugs/prescription (3.7) compared to patients having two (5.6) and multiple diseases (8.2). Hypertension was the most frequent diagnosis (n=330) and diabetes was the 2nd frequent diseases (n=307).

Conclusion: The average number of drug per prescription corresponds to the number of diseases. The retired armed forces personnel with active adult life (55-64 years) suffer more than the elderly (more than 65). Hypertension and diabetes mellitus are the most prevalent diseases.

Key-words: Prevalence of diseases, Pattern of medicine, Retired Armed Forces Personnel.

Introduction

The retired armed personnel constitute a large group of population and their treatment is ensured by the armed forces. Retired armed

forces personnel include retired members of Army, Navy and Air force. Most of the members retire after completion of their service length in the respective rank. The length ranges from 24 to 35 years. The usual entry age of armed forces ranges between 17 to 20 years. The other causes of retirements are early medical board out, premature retirement for other reasons etc. Retired Armed Forces personnel are entitled for the treatment at CMHs. They also receive prescribed medication from CMHs free of cost. The unavailable prescribed drugs also provide to them by local purchase. The average number of retired patients report to different outpatient departments (OPD) of CMH Dhaka is about 350 per day. It is observed the number of patients is increasing gradually. However, global as well as national data regarding the morbidity of the retired armed personnel are scarce. In China, retired armed forces personnel commonly suffer from hypertension, hyperlipidemia, diabetes mellitus, heart diseases, cerebrovascular diseases, and COPD. Among them hypertension (46.6%) is the most prevalent disease followed by hyperlipidemia (30.9%)¹. A study by Kabir et al carried out at CMH Dhaka on elderly population composed of retired armed forces personnel, and their elderly relatives showed generalized weakness as the most common symptom for visiting in hospital. Besides this, joint pain, eye problem and hypertension came out as other prevalent reasons for hospital visits².

Prescribing five or more drugs concurrently are considered as polypharmacy³. Use of more drugs than the actual clinical requirement such as prescribing two or more drugs for same condition or prescribing two or more drugs from same therapeutic class are considered as polypharmacy. It can be categorized as minor (when more than 2 drugs are prescribed) and major (when more than five drugs are prescribed)⁴. Polypharmacy is associated with adverse effect and drug-drug interaction. Gallagher et al observed that the incidence of adverse effects with the use of 2 drugs was 38% and it becomes double if seven or more drugs are given simultaneously⁵. The final consequences of polypharmacy increase the rate of adverse effects, geriatric syndrome, diminished functional status, longer hospital stay and increase cost of health care. It had been observed that many of the retired armed forces personnel are diagnosed with chronic diseases like hypertension, diabetes mellitus, ischemic heart diseases etc.

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Many of them also suffer from multiple co-morbidities. Consequently, they are the candidates of polypharmacy. Therefore, it demands to perform a prescription survey on the retired armed forces personnel. To evaluate the drug use patterns and disease prevalence among retired armed forces personnel, this study was conducted on retired armed forces personnel attending at different OPDs of CMH Dhaka. The results of this study will help the policymaker to plan the management strategy of retired armed forces personnel more effectively.

Materials and Methods

This cross-sectional retrospective prescription survey was carried out on 546 prescriptions obtained from the ORs pharmacy of CMH Dhaka from mid-June to mid-July, 2020. Usually retired armed forces personnel from all over the country attend the OPDs and prescribed medicines are dispensed from the ORs pharmacy. There is separate booth for the retired armed forces personnel at ORs pharmacy. Due to COVID-19 pandemic, there were limited number of OPDs were in-service viz. Medicine, Surgery, Cardiology, Paediatrics, Obstetrics and Gynaecology, and Officer's and Soldier's general OPD. However, if required, consultants from the sub-specialities attend the patients. Most of them attend for drawing their monthly medicines. Most of the prescribed medicines are supplied by the ORs pharmacy except a few which are supplied by local purchase afterwards. The patients were divided in three age groups. The age groups were 38 to 54 years, 55 to 64 years and above 65 years. Their diseases were recorded. From the collected prescriptions, average number of drugs per prescription, percentage of drugs written in generic name, percentage of prescription with an injection, percentage of prescription with an antibiotic and percentage of prescription with local purchased drugs were calculated by using WHO's method of calculation of core prescribing indicators⁴. Collected data were entered in an excel spreadsheet and the variables were calculated.

The average number of drug per prescription was calculated by dividing the total number of prescribed drugs by the total number of prescription. The average number of drugs per prescription according to number of diseases was also calculated. The percentage of drug prescribed by generic name was calculated by dividing the total number of prescribed generic drugs divided by the total number of drugs in all prescriptions followed by multiplication with 100. The percentage of prescription with an injection was calculated by dividing the total number of prescription containing injections by the total number of prescriptions followed by multiply by 100. By applying same formula, the percentage of prescriptions with an antibiotic and percentage of prescriptions containing locally purchased drug were calculated.

Results

All the patients were male. Average age of the patients was 58.6 years with the range of 38 years to 86 years. More than half of the patients were in 55 to 64 years age groups. The percentage of elderly (>65 years) was the least (21.6%). The retired armed forces personnel attended CMH to collect monthly medicines prescribed for their chronic illness. Among them, 40.0% were suffering from two chronic diseases, 37.7% of the patients were suffering from one chronic disease. However, 18.3% patients were suffering from multiple diseases. The average number of drug per prescription corresponded to the number of diseases. Patients with single disease required less number of drugs (3.7 drugs/prescription) compared to patients having two (5.59 drugs/prescription) and multiple diseases (8.2 drugs/prescription) (Figure-1). However, in this series, the average number of drugs per prescription was 5.3 (Table-II). In this series, hypertension was the most common cause of attendance at OPDs. Diabetes mellitus came as 2nd frequent clinical condition. Two hundred and ten (210) patients had both the clinical conditions. Besides them, almost equal number of patients had bronchial asthma and chronic kidney disease (Table-III). In this series, 3.1% drugs were written in generic name. 14.3 % of total prescriptions contained one or more injectable preparation and 0.5% prescription contained one or more antibiotics. In addition, 7.5% of prescription contained one or more drugs which required buying from local market (Figure-2).

Table-I: Distribution of patients according to age group (n=546)

Age group (years)	Frequency	Percentage
38-54	145	26.6
55-64	283	51.8
≥ 65	118	21.6
Total	546	100

Table-II: Average number of drugs per prescription (n=546)

Number of disease	Number of prescription (%)	Total prescribed drugs	Average drugs per prescription
Single disease	206 (37.7)	751	3.7
Two diseases	240 (40.0)	1342	5.6
Multiple diseases	100 (18.3)	822	8.2
Total	546 (100)	2915	5.3

Table-III: Distribution of major chronic diseases according to age group of patients

Age group (years)	Chronic diseases				
	HTN	DM	CKD	Bronchial Asthma	HTN+DM
38 - 54	83	81	09	11	49
55-64	173	157	32	27	109
65 and above	74	69	16	18	52
Total	330	307	57	56	210

Note: HTN=hypertension, DM=Diabetes mellitus, CKD= Chronic kidney disease

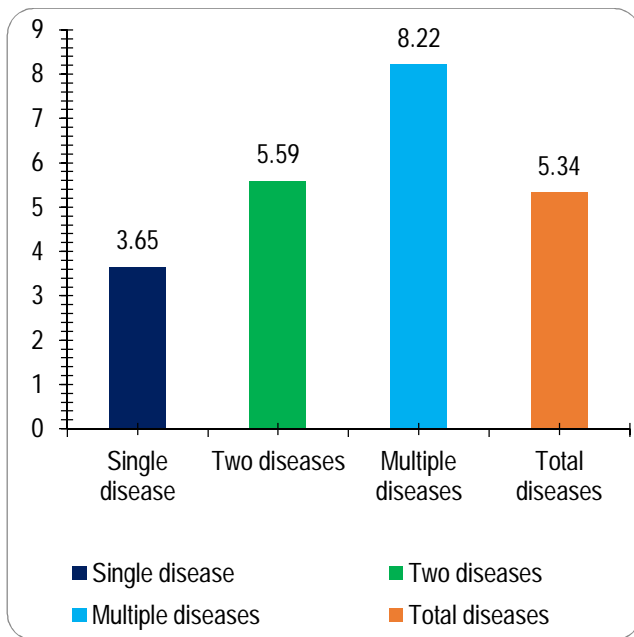


Figure-1: Average drug per prescription

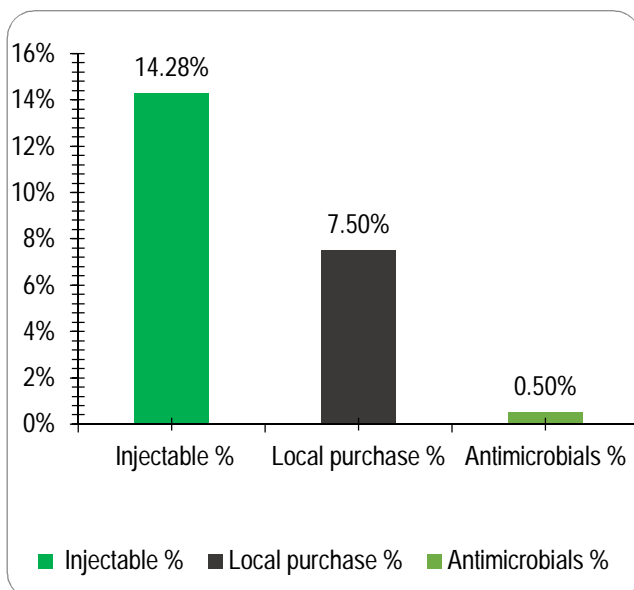


Figure-2: Percentage of prescription containing injectables, antimicrobials and locally purchased drugs

Discussion

This study revealed that the average number of drugs per prescription corresponded with the number of associated diseases. The retired armed forces personnel suffered from single chronic disease required less number of medication compared to the personnel who suffered from two or multiple diseases. On average, the number of drugs per prescription was 5.3 which indicate polypharmacy. However, when stratified according to the number of suffered diseases, it showed about 62% armed forces personnel actually received polypharmacy in this series. A comprehensive literature search didn't retrieve published reports regarding the drug use pattern among retired armed forces personnel in Bangladesh as well in abroad. However, a study on drug use pattern of general elderly population from a tertiary private health care facility revealed about 69% elderly patients received more than five drugs, the result of which is comparable to this study⁷. A South Indian study on elderly patients also showed about 66.2% of the patients received more than five drugs⁸. After retirement, the armed forces personnel pass through comparable lifestyle with other elderly population. For the similar lifestyle, they got similar types of morbidity and treatment. Here prescribing behaviour of the doctors of these studies are almost same.

In this series, the patients were stratified in three age groups. The age distribution was done according to standard distribution of population by age. Here, about more than half of the retired armed forces personnel were between 54 to 64 years. However, less prescriptions was from higher age groups indicated that elderly retired armed forces personnel were healthier compared to the younger fellows. It also indicates that the chronic diseases are appearing at early age. In this series, 14.3% of total prescription contained one or more injectable preparations. Injectable preparation is considered as expensive medication. Some patients want to get as they think injectables are superior to oral medication. However, here insulin preparations were prescribed as injectables for the treatment of diabetic patients. The use of antibiotics in retired armed forces personnel was very low. Only 0.05% prescription contained an antimicrobial agent. The result is corresponding with the study done by Rakesh and coworkers on elderly persons⁸. The similar result of both the studies indicates that elderly patients don't suffer from infections.

Hypertension and diabetes came as the main diseases from which the retired armed forces personnel had suffered. Chronic kidney diseases (CKD) also came as the remarkable cause of chronic illness among them. However, among the patients admitted in CMH Dhaka, the distribution pattern was quite different; hypertension came as the 4th prevalent cause hospital admission whereas diabetes mellitus was the most common cause of hospital admission². The difference is due to difference of health care settings between the studies.

Conclusion

The average number of drug per prescription correspond to the number of chronic diseases among the retired armed forces personnel. The retired armed forces personnel with active adult life suffer more than the elderly retired armed forces personnel. Hypertension and diabetes mellitus is the most prevalent diseases among the retired armed personnel. More than half of the patients suffer from two diseases. Infections don't afflict retired armed personnel. In CMH, drugs are not usually prescribed in generic name. Local purchased drugs containing prescription were 7.5% of total prescriptions. Multicenter study involving all CMHs with large sample size will explore the actual scenario of disease prevalence and drug use pattern among retired armed personnel of Bangladesh.

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