

Hypertension control in a community health centre at Riyadh, Saudi Arabia

Saima Siddiqui, MRCGP, Danny O. Ogbeide, FWACP, FRCGP, Anjum Karim, MRCP, Ibrahim Al-Khalifa, FRCGP.

ABSTRACT

Objective: This study was carried out to determine the degree of control of hypertension and the most commonly used drugs for hypertensive patients attending our community health center.

Methods: A cross sectional study carried out by randomly examining the case notes of patients attending our primary care clinics.

Results: Case notes of 3747 patients were examined, 2064 (55%) females (mean age 23.76 years) and 1683 (45%) males (mean age 24.63 years). Prevalence of hypertension was 3% (108 patients), 3% (63 patients) and 3% (45 patients) for females and males respectively. Majority of patients 16 (35%) males and 32 (51%) females had blood pressure of 141-160/90-100 mmHg. Seventeen (37%) males and 15 (24%) female patients had blood

pressure < 140/90 mm Hg. Among 108 hypertensive patients, 29 (65%) males and 44 (69%) females were on single drug. The most commonly used drugs were ACE inhibitors (35%), calcium channel blockers (17.5%) and beta-blockers (14%).

Conclusion: This study like some other studies shows that control of hypertension falls short of recommended goals. There is need to adopt a strategy that incorporates health education about life style and proper protocol as this has been found useful in other studies.

Keywords: Hypertension, control, antihypertensives, community.

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Hypertension is a major modifiable risk factor for coronary heart disease (CHD), cerebrovascular accidents (CVA), congestive heart failure (CHF), stroke, renal failure and heart failure.¹⁻⁴ Studies have shown a prevalence of 10% to 30% in adult population requiring management with pharmacological or non-pharmacological means.⁵ In elderly, treatment of diastolic hypertension or isolated systolic hypertension reduces the risk of heart failure and dementia.⁶⁻⁸ All this evidence makes it very clear that good control of hypertension is extremely important for reducing the considerable morbidity and mortality it causes through increasing the incidence of cardiovascular events including myocardial infarction and heart failure, stroke, and renal failure. From our literature search there are

very few studies on the degree of control of hypertension in this community. The objective of this study is to ascertain the degree of control of blood pressure and review the medications, among hypertensive patients attending our primary care clinics.

Methods. We conducted a cross-sectional retrospective study by collecting the data from medical records of patients attending primary care of Alkharj Military Hospital. All the patients diagnosed as having hypertension, whether using medications or not were considered hypertensives. Total eligible population of this hospital is about 100,000. Statistician advised a minimum sample size of 1500.

From the Department of Family & Community Medicine, Al-Kharj Military Hospital, Al-Kharj, Kingdom of Saudi Arabia.

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Address correspondence and reprint request to: Dr. D. O. Ogbeide, Department of Family & Community Medicine, PO Box 318, Al-Kharj 11942, Kingdom of Saudi Arabia. Tel. +966 (1) 545 1870 Fax. +966 (1) 545 1870 Email: izehi.ogbe@prime.net.sa

Table 1 - Showing the average blood pressure ranges for male and female hypertensive patients according to age group.

Blood pressure in mm Hg	18-34 years		35-64 years		65-74 years		75 years & over		Total
	M	F	M	F	M	F	M	F	
<140/90 mm Hg	3	1	7	6	2	5	5	3	32 (31%)
141-160/91-100 mm Hg	0	0	10	20	4	9	2	3	48 (43%)
161-180/101-110 mm Hg	0	2	5	5	6	4	1	4	27 (25.5%)
181-200/101-110 mm Hg	0	0	0	0	0	1	0	0	1 (1%)
Total	3	3	22	31	12	19	8	10	108

M-Male, F-Female

For randomization of the sample case notes on the 1st, 25th, 50th, 75th, and 100 positions were taken as the case notes are arranged in cabinets with 6 or 7 shelves in each cabinet. Every shelf contains 100 case notes. Data was collected for a total of 3747 patients. Patients were divided into five age groups. Total numbers of male and female patients, their distribution according to age groups and total number of patients with hypertension were recorded. Primary care doctors record the blood pressure of patients using a standard sphygmomanometer. Systolic blood pressure is recorded at first kottokoff (K1) sound (two consecutive beats) and diastolic BP is recorded at the disappearance of the last beat (K5). Reading closest to even number is taken as final reading. Last three BP readings at least 3 months apart were recorded. The average was calculated for the purpose of finding out the degree of control of BP. Medications used by each hypertensive patient was also recorded. Data was analyzed using EPI-

INFO 5 statistical software by χ^2 test. A value of $p < 0.05$ was considered as statistically significant.

Results. Data was collected for 3747 subjects of which 2064 (55%) were females and 1683 (45%) were males. Distribution of subjects according to age group were 1734 in the group of 0-17 years, 1023 for group of 18-34 years, 785 in 35-64 years group, 125 for 65-74 years group and 80 in the group of 75 years and above. In males the total number of hypertensive patients were 45 (3%). Total number of female hypertensive patients were 63 (3%). Total number of hypertensive patients in both groups was 108 (3%). The average blood pressure ranges for males and females according to age groups are shown in Table 1. The highest frequency (43%) of hypertensive patients were in the group having a blood pressure of 141-160/91-100 mm Hg. It was significantly higher as compared to the group having

Table 2 - Showing the drug treatment of hypertensive patients according to age group.

Drug groups	18-34 years		35-64 years		65-74 years		75 years & over		Total
	M	F	M	F	M	F	M	F	
ACE inhibitors	2	0	12	19	1	3	0	1	38
Beta-blockers	0	0	4	4	2	3	1	2	16
Calcium channel blockers	0	0	2	3	3	4	2	5	19
ACE inhibitors+Beta-blockers	0	2	2	1	0	1	1	0	7
ACE inhibitors+Calcium channel blockers	1	0	1	2	4	4	2	1	15
Diuretics	0	1	1	0	1	1	0	0	4

M-Male, F-Female

blood pressure of < 140/90 mm Hg (30.8%, $\chi^2 = 5.08$, $p < 0.005$) and 161-180/101-110 mm Hg (25.5%, $\chi^2 = 9.01$, $p < 0.005$). Majority of the young patients (18-34 years) had blood pressure of < 140/90 mm Hg ($\chi^2 = 9.67$, $p < 0.05$) as compared to the patients above 35 years of age. The subjects from 35-64 years age group show significantly high frequency of blood pressure of 141-160/91-100 mm Hg as compared to 18-34 years ($\chi^2 = 6.91$, $p < 0.01$) and 75 years and above ($\chi^2 = 4.47$, $p < 0.05$). The frequency of subjects from different age groups having blood pressure of 161-180/101-110 mm Hg was variable, but not statistically significant (Table 1).

The most common used medications by male and female patients are shown in Table 2. One hypertensive patient was using a combination of ACE inhibitor, Calcium channel blocker and beta blocker, 2 patients were using combination of calcium channel blockers and diuretics, 3 were controlled by non-pharmacological means and 3 were using combination of calcium channel blockers and beta blockers.

The frequency of hypertensive patients treated with ACE inhibitors was significantly higher as compared to other medications used including beta-blockers ($\chi^2 = 12.32$, $p < 0.001$), calcium channel blockers ($\chi^2 = 8.89$, $p < 0.005$), ACE inhibitors + Beta-blockers ($\chi^2 = 27.64$, $p < 0.00001$), ACE inhibitors + calcium channel blockers ($\chi^2 = 13.36$, $p < 0.001$) and diuretics ($\chi^2 = 34.93$, $p < 0.0001$).

Discussion. In this cross sectional study we tried to find out the degree of control of blood pressure among our hypertensive patients according to the British Hypertension Society Guidelines published in 1999 i.e., the target should be less than 140 mm Hg for systolic and less than 85 mm Hg for diastolic blood pressure.⁹ Results showed that most of our patients 17 (37%) male hypertensives and 15 (24%) female hypertensives were having blood pressure less than 140/90 mm Hg (Table 1). It is shown that the risk of stroke is 100% higher at blood pressure of more than 140/90 mm Hg as compared with blood pressure of 125/75 mm Hg in the persons of same age.⁴ Our data showed that 16 (35%) male hypertensive patients and 32 (51%) female hypertensive patients had blood pressure of 141-160/90-100 mm Hg. More females with blood pressure of 141-160/90-100 mm Hg can be attributed to the high prevalence of obesity,¹¹ sedentary life style, poor eating habits, low literacy rate and more frequent visits to general practitioners.¹²

The data for the drugs shows that 29 (64%) male patients and 44 (70%) female patients were on single drug treatment for hypertension. Studies have shown that majority of hypertensive patients require more than one antihypertensive drugs from different classes for achieving the recommended target

level^{10,13} as they generally show additive effect in reducing the blood-pressure with less side effects. The most commonly used drug in both male and female patients was ACE inhibitors (38 patients/35%) followed by calcium channel blockers (19 patients/17%) and beta-blocker (16 patients/15%). The most commonly used combination was of ACE inhibitors and calcium channel blockers (15 patients/14%). This is not in line with the recommendation that low dose thiazide diuretics or beta-blockers are the preferred drugs of first choice in the absence of any obvious contraindications.⁹ Diuretics were used by 4% (2) male patients and 3% (2) female patients (total 8%) showing almost a similar pattern as in another study in Saudi Arabia where 10% patients were receiving diuretics.¹⁴ This may be due to high number of hypertensive patients having coexisting diabetes mellitus making diuretics less popular with most doctors. British Hypertension society recommends a proper protocol for hypertension screening, management, treatment targets and follow up in every primary care setting. It also recommends written information for hypertensive patients about the disease and its management.¹⁷

In conclusion the results of this study show that control of blood pressure among hypertensive patients on drug treatment is still far from the target aimed in most of the guidelines.^{9,17,18} As hypertension is a disease of multifactorial etiology, non-pharmacological means of reducing the factors resulting in hypertension and uncontrolled blood pressure are as important as pharmacological means. Increasing awareness among the general population about the importance of regular exercise, eating more vegetables and fruits and avoiding fats and stopping smoking is very important and cost effective.

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