Mini Review

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An observation on a small group of hypertensive and diabetic patients in Bangladesh

Abstract

40 patients were considered to observe the relation between hypertension and diabetes mellitus. Report suggested that 40 hypertensive patients there were 18 (45%) with diabetes mellitus (type 1=3, type 2=15) where 80% were found in their family. Diabetes mellitus were noticed higher in male (60%) (Figure 1) where ages from 38-61 years. Only 1 was in myocardial infarction (MI) (Figure 2) and 3 patients were totally dependent on insulin inject (type 1 diabetes). Blood pressure ranges from 130-150 systolic and 88-100 diastolic (Table 1). Between HTN and other diseases the results were insignificant and negatively correlated. In case of age and HTN the result was same. Only between HTN and patients' family history significant result were found but correlation were negative. Overall result of this observation has mentioned that hypertension has no significant effect on diabetes mellitus (type 1, type 2), myocardial infarction and others. Each patient had very bad food habit, lack of exercise and some showed bad habits (smoking and betel leaf with accessories) and controlled their problems by medications.

Keywords: diabetes, hypertension, comorbidities, nephropathy, dyslipidaemia

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Introduction

The appropriate management of the hypertension almost 70% of patients with type 2 diabetes mellitus remains controversial. Hypertension and diabetes mellitus occur together officially considered 'comorbidities'. In diabetic patients increased fluid volume and arterial stiffness so that hypertension happens. Moreover, patients impaired insulin handling can directly causes increases in blood pressure. Kidney is our body's important long-term blood pressure regulator. Diabetes mellitus patient has twice chance to attack hypertension.[1–3] Comorbidities people has appropriately twice the risk of cardiovascular disease (The sixth report of the hypertension) and also increased risk of retinopathy and nephropathy.[1,2] Urbanization is characterized by marked increase in the intake of energy dense foods, decrease physical activity, heightened level of psychosocial stress, all of which promote the development of dysglycaemia, hypertension, and dyslipidaemia.[4] The Indian subcontinent has a higher prevalence of diabetes mellitus than any other region in the world, and 2-3 times the reported prevalence in western countries.[5] The Indian Council of Medical Research (ICMR) estimates that the prevalence of diabetes is 3.8% in rural areas, compared with 11.8% in urban areas.[6] 1990-1994 National Health Survey of Pakistan revealed that 1/3 of the Pakistani over the age of 45year had hypertension. INTERHEART case-control study of risk factors for acute myocardial infarction (MI) has documented that there is an increased risk of MI associated with all forms of smoked and smokeless tobacco.[7] A review of 250 observational studies estimated that increase consumption of fruits and vegetables is associated with a 16% lower risk of CVD.[8] It is commonly believed that south Asian vegetarian takes large quantities of fruits and vegetables (unpublished data). Briskly walking 35-40 minutes per day is associated with a 55% lower risk of CHD.[9] Cultural norms in certain Muslim communities may be in part responsible for those low rates of physical activity. Smoking, hypertension, diabetes mellitus, abdominal obesity, stress protective factors (physical activity, intake fruits and vegetables, and alcohol consumption) was associated with over 90% MI in the world (94% female).[10] Policy efforts low HDL, reduce sodium, hypertension, increase fruits and vegetables. WHO reported that childhood obesity in some developing countries has increased by 28% in only two years.[11] The most common risk factors of CVDs, were tobacco consumption, hypertension, diabetes mellitus dyslipidemia, animal protein-rich diet and sedentary lifestyle.[12] Cardiovascular diseases caused by disorders of the heart and blood vessels and include coronary heart disease (heart attacks) cerebro-vascular disease (stroke), raised blood pressure (hypertension), peripheral artery disease, rheumatic heart disease, congenital heart disease and heart failure.

Methodology

For this study 40hypertensive patients were considered between ages 38-61distinguished on their age, other diseases and family history (Table 1).

Statistical analyses by using SPSS

Correlations between HTN& diseases: insignificant and negative correlation

		HTN	DISEASES
HTN	Pearson Correlation	1	-0.045
	Sig. (2-tailed)		0.784
	N	40	40
Diseases	Pearson Correlation	-0.045	1
	Sig. (2-tailed)	0.784	
	N	40	40

Correlations between age & HTN: insignificant and negative correlation

		AGE	HTN
AGE	Pearson Correlation	1	-0.091
	Sig. (2-tailed)		0.575
	N	40	40
HTN	Pearson Correlation	-0.091	1
	Sig. (2-tailed)	0.575	
	N	40	40

Correlations between HTN& family history: significant but negative correlation

		HTN	FAMILY
HTN	Pearson Correlation	1	-0.315
	Sig. (2-tailed)		0.048
	N	40	40
Family	Pearson Correlation	-0.315	1
	Sig. (2-tailed)	0.048	
	N	40	40

*Correlation is significant at the 0.05 level (2-tailed).

ANOVA: HTN

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.862	3	0.287	2.442	0.08
Within Groups	4.238	36	0.118		
Total	5.1	39			

Inference: HTN has no significant effect on diseases (DM1, DM2, MI and none).

Results

(Table 1) & (Figure 1-2)

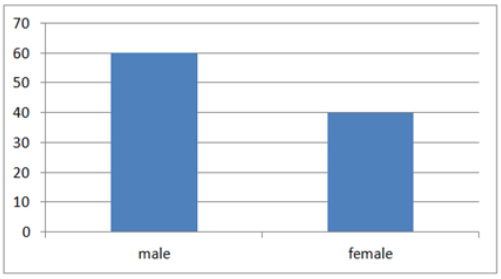

Figure 1 The % of DM in male and female (negative correlation).

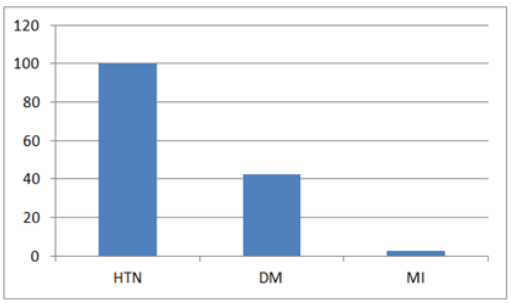

Figure 2 The % of DM and MI corresponding with HTN (negative correlation).

Table 1 Hypertension in a small group with other complications

Patients	Age	Sex	BP	Other diseases	Family history
1	52	male	140/96	DM (type 2)	yes
2	53	male	140/98	DM (type 2)	yes
3	61	male	130/90	MI	yes
4	50	female	130/90	DM (type 2)	no
5	38	male	140/90	none	yes
6	61	male	150/98	DM (type 1)	yes
7	40	male	150/100	none	yes
8	44	female	130/90	none	yes
9	53	male	140/100	none	yes
10	46	male	130/88	DM (type 2)	no
11	57	male	140/94	DM (type 2)	yes
12	54	male	140/96	none	yes
13	44	male	150/100	none	yes
14	60	male	140/90	DM (type 2)	yes
15	46	male	140/98	DM (type 2)	yes
16	46	male	130/90	DM (type 2)	yes
17	50	male	150/100	none	yes
18	45	male	160/100	none	yes
19	50	male	140/98	DM (type 2)	yes
20	60	male	140/98	none	yes
21	55	male	150/100	DM (type 2)	yes
22	45	male	130/90	none	no
23	40	male	140/90	none	yes
24	48	female	150/100	DM (type 2)	no
25	55	female	140/98	DM (type 2)	yes
26	57	female	140/98	DM (type 1)	yes
27	55	male	140/98	none	yes
28	56	female	140/96	none	yes
29	48	male	140/90	DM (type 1)	yes
30	42	male	140/100	none	no
31	46	male	140/98	none	no
32	53	male	140/98	DM (type 2)	yes
33	48	male	140/96	none	yes
34	44	male	140/100	none	yes
35	56	female	140/100	none	yes
36	38	male	150/100	none	yes
37	46	male	140/98	none	yes
38	44	male	140/98	none	yes
39	58	male	140/98	DM (type 2)	no
40	60	female	140/90	DM (type 2)	no

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Discussion

In urban population of India, there was found smoking, physical inactivity, hypertension, hypercholesterolemia, diabetes and obesity were significant with CHD.[4] One of the study found that tobacco consumption was more prevalent among young (60.06%) compared to older people (48.43%). According to Zaman et al.,[13] male tobacco users used any form of tobacco on an average 11 times a day and female 8 times a day. This population of tobacco use was higher in older age in both sexes. The excess risk of cigarette smoking is 2-4 times higher in women than men. In women, association between hypertension, coronary artery disease and early mortality is stronger, than men. A study suggested on 20 hypertensive patients where 2 only unchanged but 18 are shown very effective yoga on their blood pressure.[14] Hypertensions with diabetes mellitus (12.7%) out of 11478 in 12 villages were studied of Taiwan province.[15] Although the association between glucose level and hypertension is expected to obesity and age.[16–19] Aforementioned studies on diabetes and hypertension have typically been completed in white populations but little among oriental population. Diabetic subjects had a two- to threefold increase in hypertension compared with nondiabetic subjects.[20] Epidemiological study was analyzed to evaluate the relationship between hypertension and non-insulin dependent diabetes among Chinese peoples. The age- and sex adjusted prevalence rate of hypertension in diabetic patient was 30.6%, twice that of nondiabetic subjects. Diabetic patient with hypertension was 4.1% ($P<0.001$) greater than those without hypertension. Among 608 diabetic subjects, the prevalence of hypertension was 42.2% (27 of 64) and 31.1% (169 of 544), respectively, for those with and without family history of diabetes mellitus ($P=0.10$). Hypertension and diabetes mellitus were positively associated with BMI (Basal Metabolic Rate) (30-33).[13] Chronic diabetic patient has nephropathy which is the cause of hypertension.[21,22] The significance of this paper is very important because the practical background of mentioned patients' their food habit is very bad then lack of physical work and finally with some bad habits.[23–25]

Conclusion

Due to hypertension, need to observe and control the blood pressure of the patients always. Before hospitalize we may provide first aid. After going to hospital, physician will observe patients' cardiac output. Urgent ECG is must and pain killer may need. Most hypertensive patients have lot of bad habits. We should avoid bad cholesterol containing food, smoking, and betel leaf and manage obesity. If anybody has diabetes mellitus, he/she should strongly control itby proper medicines which are recommended by a physician along with proper diet and exercise. We should remember that diet and healthy lifestyle help us to control hypertension and diabetes mellitus. Normally cross sectional study does not allow on the conclusion on the casual relationship between blood pressure and diabetes mellitus.[13]

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Conflict of interest

The author declares no conflict of interest.

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