

The Causes of Hypertension in Human Population visiting Sughra Shafih Medical Complex

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Abstract

The data about the major causes of hypertension of approximately one hundred patients of hypertension was collected by interviewing them at Sughra Shafih Medical Complex, Narowal. The data had been analyzed to determine the relative occurrence and incidence of hypertension and effects of various causes. The analysis shows that hypertensive patients were more prevalent (60%, n=60/100), and non-hypertensive patients were less prevalent (40%, n=40/100). The prevalence of hypertension was more in females (64.00%) as compared to males (34.00%). The major risk factors of hypertension were diabetes, obesity and overweight, tension, smoking. Some females were hypertensive during pregnancy. High cholesterol level also contributes to hypertension. In our sample out of hypertensive patients 42% were diabetic, 25% were obese, 10% were smokers, 16.6% were hypertensive because to tension and 7% females were hypertensive during pregnancy. It may persist for prolonged periods in the individual without signs well-known as "the silent killer", and may perhaps noticeable just after causing severe irretrievable pathology and complications.

Keywords: Hypertension, cholesterol, diabetes, obesity, risk factors, prevalence.

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INTRODUCTION

In Hypertension situation the blood pressure is persistently prominent. The hypertension is also known as arterial hypertension. It is kind of cardiovascular disease is prevalent in almost 25 percent of adults and its incidence increases with age (Klag *et al.*, 1996). Hypertension accounts for 9.4 million deaths out of 17 million deaths occurring due to CVDs worldwide (Lim *et al.*, 2012; WHO, 2013) and 80% CVD associated deaths occur in developing countries (Lozano *et al.*, 2012).

There are two types of Hypertension known as primary (essential) or secondary. The first one which is known as Essential hypertension determines that there are no specific causes to elucidate patient's condition. Secondary hypertension shows that high blood pressure is caused by another condition, such as kidney disease or tumors (pheochromocytoma and paraganglioma). Hypertension is also responsible for strokes, heart failure, heart attack and arterial aneurysm, and is a reason of chronic renal failure. Arterial pressures (severe high pressure condition) 50

percent or more over normal, a person cannot survive more than a few years besides given a few suitable cure (Guyton and Hall, 2005).

There are also necessities to provide the treatments to patients with blood pressure more than 130/80 mm Hg along with other disease like Type 1 or Type 2 diabetes, or kidney disease. The malfunction to decrease blood pressure to the suitable stage after taking a three-drug regimen is called resistant hypertension. Hypertension is also responsible for high morbidity and mortality by significantly increasing the rate of myocardial infarction, congestive heart failure, stroke, peripheral vascular diseases and renal failure (Coresh *et al.*, 2001).

The probability of occurrence of hypertension is 5 times greater in the obese than normal weight people. Sodium intake is a risk factor to hypertension as rising amounts of salt in an individual's bloodstream causes cells to discharge water (due to osmotic pressure) to maintain concentration gradient resulting in the force on the blood vessel walls (Mazzali, 2002).

The polypeptide hormone known as insulin is released by cells in the islets of langerhans, present in the pancreas. The main purpose of insulin is to control the levels of glucose in the body antagonistic to glucagon. In normotensive persons, sympathetic activity is stimulated by insulin exclusive of increasing mean arterial pressure. Sleep apnea is a widespread, under-recognized risk factor of hypertension (Silverberg *et al.*, 2002).

Hypertension is a multifactorial disease, with hereditary averaging 30% and these outcomes emerge from animal studies along with the population studies in humans. More than fifty genes have been studied in relationship to studies with hypertension and the amount is continuously rising (Sontia and Mooney, 2008).

Even though hypertension is rare in kids and young people, facts reveal that the roots of hyper-tension are there in infancy. High BP in early days is an outstanding interpreter of hypertension in old age. Various studies have confirmed end-organ failure, including left ventricular hypertrophy and micro albuminuria, in hypertensive children. Therefore, anticipation of hypertension is the most excellent resources for preventing long-term morbidity and mortality. Even though a small number of women of childbearing age have high blood pressure, up to ten percent build up hypertension of pregnancy (Sagnella and Swift, 2006).

The main purpose of the study was to investigate different causes of hypertension in males and females visiting Sughra Shafih Medical Complex, Narowal.

MATERIALS AND METHODS

The current study was carried out at Sughra Shafih Medical Complex in order to work out the causes of hypertension among male and female population residing in Narowal District and to find out different risk factors. For the purpose of collecting patient history a Performa was developed. The Performa include information regarding family history of patient and major risk factors of hypertension including diabetes, obesity, tension, smoking and pregnancy. Tabulation was carried out by using Microsoft Excel (MS Excel 2010, Microsoft Corporation). SPSS version 16.0 statistical software (SPSS, Chicago, IL) was used for statistical analysis.

RESULTS AND DISCUSSION

The current study was intended to find out the occurrence and causes of hypertension among hospital population. The data regarding incidence of hypertension is presented in Figure 1. There had been found a higher prevalence of hypertensive (60.00%) as compared to non-hypertensive (40.00%). Hypertension is widespread health problem and its incidence is also rising. According to Pakistan National Health Survey (PNHS, 1998) the incidence of hypertension was higher in the urban population than rural population (Aziz *et al.*, 2005; Dennis

et al., 2006). According to Raza *et al.* (2000) stratified sample of 3991 males and females, the prevalence of hypertension was 17.7 percent in adult population of Punjab. Among hypertensive 96.2 percent have mild hypertension 1.65 percent have moderate hypertension and 2.2 percent have severe hypertension. Among hypertensive 18.6 percent were aware about their hypertension and only 12.5 percent were using anti-hypertensive drugs. Similarly Bhansali *et al.* (2015) documented that metropolitan inhabitants of Tamil Nadu, Jharkhand, Chandigarh and Maharashtra (31.5, 28.9, 30.7 and 28.1%) had significantly elevated occurrence of hypertension in contrast to rural inhabitants (26.2, 21.7, 19.8 and 24.0%, correspondingly). In another study in Bangladesh the overall prevalence of hypertension was reported to be 26.4 % (Chowdhury *et al.*, 2016).

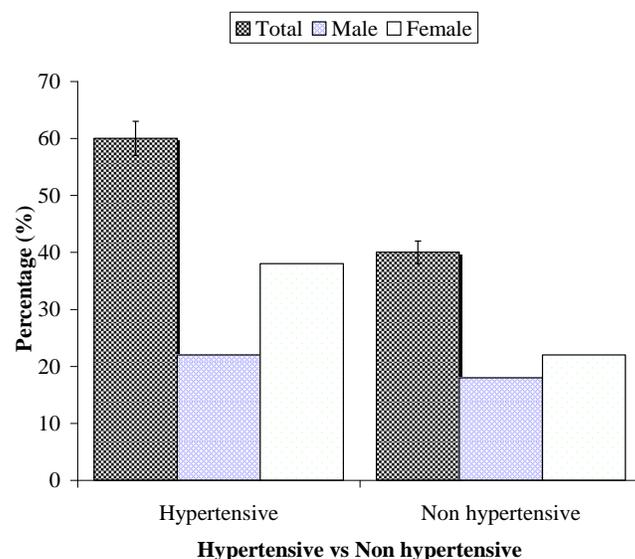


Fig. 1. Prevalence of hypertension in 100 cases under study.

Various causes are studied in relation to the incidence of hypertension. These include sex, obesity, smoking, diabetes mellitus, tension and pregnancy. One hundred patients were studied in which there had been found a higher incidence in females (64.00%) than males (36.00%) (Figure 2). Similarly it has been demonstrated in other studies that hypertension is more prevalent in women than in men, with a female-to-male ratio of 1.5:1 (Raza *et al.*, 2000). According to Pakistan National Health Survey (PNHS, 1998) the prevalence of hypertension was higher higher in females (Aziz *et al.*, 2005; Dennis *et al.*, 2006). Chowdhury *et al.* (2016) demonstrated the higher prevalence in women (32.4 %) than men (20.3 %) in Bangladesh.

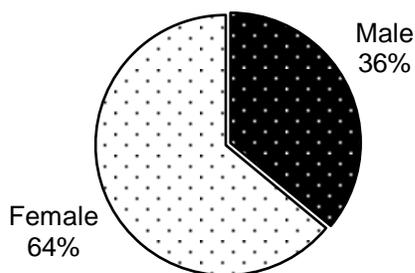


Fig. 2. Sex distribution in 100 patients of hypertension.

The incidence of hypertension in patients suffering from diabetes mellitus was 41.60%, among which 60.00% were females and 40.00% were males (Figure 3). 30% patients suffering from diabetes mellitus were non-hypertensive (Table 1). Raza *et al.* (2000) found no statistically significant difference between sugar level of males and females. The unhealthy diet is a cause of high prevalence of hypertension in most communities in Pakistan (Aziz *et al.*, 2008; Aziz *et al.*, 2005; Dennis *et al.*, 2006). Dzietham *et al.* (2007) documented increase in diabetes and essential hypertension in the world.

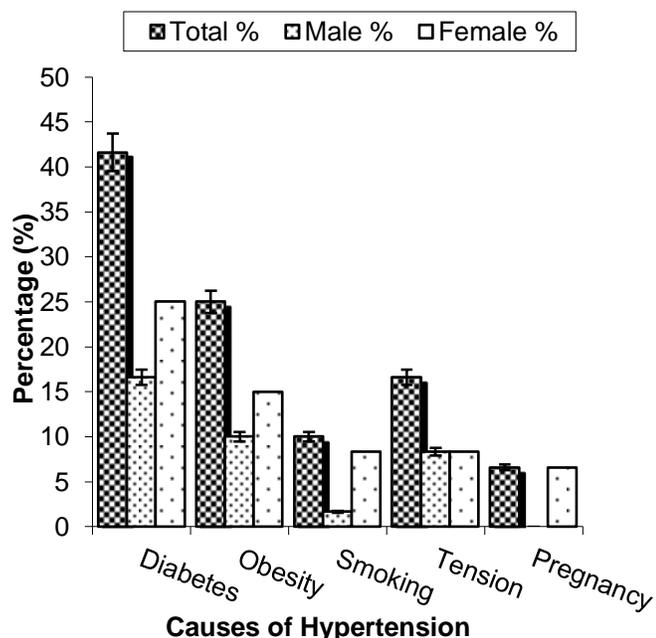


Fig. 3. Prevalence of different types of hypertension in relation to various risk factors

The incidence of hypertension in obese patients was 25.00% among which 60.00% were females and 40.00% were males (Figure 3). Females were more obese due to many reasons, due to high level of cholesterol level. On the other hand 25% patients were obese and non-hypertensive (Table 1). According to Raza *et al.* (2000) 18.9% population was found over weight and 4.7% were obese and hypertension was more prevalent among obese and overweight subjects. Dennis *et al.* (2006) reported higher incidence of hypertension due to obesity in urban population of Pakistan than rural and greater prevalence was found in female than male population.

Smokers had a higher incidence of hypertension (10.00%). The risk factor of smoking found in females was 83.33% and in males was 16.66% shown in Figure 3. Among smokers 15% patients were non-hypertensive (Table 1). Raza *et al.* (2000) found that out of sample population 18.9% subject were smokers. The prevalence of hypertension among smokers is 17.4% and among nonsmoker is 18.0%. There is no statistically significant association between hypertension and smoking. Rural and urban males were found smoking and females mostly did not smoke in Pakistan except affluent teen agers (Aziz *et al.*, 2005).

In our sample 16.6% patients were hypertensive due to tension and have no other disease. Out of this 50.00% were males and equally 50.00% were females (Figure 3). There is relationship bring into being among hypertension and tension. The outcome of our examination sustain the idea that pre hypertension increases the rate of series to hypertension autonomously of other predictable threat. Among the patients studied 20% patients had the symptoms of tension but they were non-hypertensive (Table 1).

Table 1. Sex specific prevalence of hypertension in relation to various risk factors

Risk factors	Prevalence of Hypertension		
	Total %	Hypertensive %	Non-hypertensive %
Diabetes	71.6	41.6	30
Obesity	50	25	25
Smoking	25	10	15
Tension	36.6	16.6	20
Pregnancy	16.6	6.6	10

In our sample 7% women were hypertensive due to pregnancy (Figure 3) and 10% pregnant women were found non-hypertensive. During pregnancy the blood pressure exceed than the normal rate of blood pressure. A significant relationship was found between pregnancy and hypertension. Raza *et al.* (2000) also confirmed a significant relation between pregnancy and hypertension.

Bhansali *et al.* (2015) showed that age, male sexual category, town habitation, widespread fatness, diabetes,

substantial indolence and alcohol utilization were significantly linked with hypertension.

The risk factors like diabetes, smoking, family history, tension and obesity also contribute to the development of other diseases like hernia and angina pectris in human population (Iqbal *et al.*, 2015; Iqbal *et al.*, 2016).

In the present study all the recurrence rate of hypertension was 15% and mortality rate was found to be 12% (Table 2).

Table 2. Recurrence rate of hypertension and mortality rate due to hypertension.

Parameters	Total %	Male %	Female %
Recurrence rate	15	13	2
Mortality rate	12	7	5

CONCLUSION

The major risk factors of hypertension were diabetes, obesity and overweight, tension, smoking. Some females were hypertensive during pregnancy. Epidemiological studies should be organized occasionally to determine the incidence rate of such chronic and disabling diseases.

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CONFLICT OF INTEREST

There is no conflict of interest.

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