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The importance of the family history on the development of hypertension.

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Summary:

Background: High blood pressure is one of several risk factors that can increase your chance of developing heart disease , a stroke, and other serious conditions. In spite of medical progress that involve diagnostic methods for hypertension, pathogenesis of primary hypertension still remains not fully detected. However; the important role of family history and genetics were considered.

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Methods: 122 adult individuals of either sex were questioned and examined. Blood pressure was measured for all subjects using mercury sphygmomanometer. Systolic blood pressure and diastolic blood pressure were recorded by skilled mercury method, and the mean BP was calculated according to the formula (diastolic blood pressure+1/3pulse pressure). Body mass index was measured also.

Results: A significant number of subjects reported a positive family history of hypertension. Some subjects with a family history of hypertension had higher diastolic BP others had higher systolic.

Conclusions: A family history of hypertension was significant risk factors for the development of hypertension and other pathological manifestations which can develop in a high risk individuals. Health professionals should therefore utilize every opportunity to include direct family members in health education.

Key word: Hypertension /family history.

Introduction:

High blood pressure is one of several risk factors that can increase your chance of developing heart disease, a stroke, and serious conditions , as a role the higher the blood pressure , the greater the risk. Treatment includes a change in life style risk factors where these can be improved – losing weight if you are overweight, regular physical activity, a healthy diet, cutting back if you drink a lot of alcohol, stopping smoking and a low salt and caffeine intake .

If needed, medications can lower blood pressure. (1) In the UK, about half of people over 65, and about 1 in 4 middle aged adult, have high blood pressure. It is less common in younger adults.

Most cases are mildly high (up to 160/100mmHg). However at least 1 in 20 adults have blood pressure of 160/100mmHg or above. High blood pressure is more common in people with diabetes, about 3 in 10 people with Type 1 diabetes and more than half of people with type 2 diabetes eventually develop high blood pressure.

With a family history of high blood pressure with certain life style factors, that is, those who are overweight, eat a lot of salt, don't eat many fruit and vegetables, don't do enough exercise , drink a lot of coffee or other caffeine rich drinks, or drink a lot of alcohol.(2) Blood pressure should be checked at least once a year in older people, people who have had a previous high reading , people with diabetes and people who have had a previous reading between 130/85 and 139/89mmHg . According to the latest US national guidelines. (3), the following categories of hypertension have been defined:

Table 1:

Classification	systolic (mm Hg)	diastolic(mmHg)
Normal	<120	<80
Prehypertension	120_139	80_89
Stage 1	140_159	90_99
Stage 2	>160	>100

*Arterial pressures less than 90/60mmHg are considered hypotension and therefore not normal.

It is important to note that a hypertensive state may be defined as an abnormal elevation of either systolic or diastolic pressure. In past years, the diastolic value was emphasized in determining whether or not a person was hypertensive. However, elevations in systolic pressure (systolic hypertension are also associated with increased incidence of coronary and cerebrovascular diseases) .Therefore we now recognize that both systolic and diastolic pressure values are important to note. Non communicable diseases (NCD), particularly hypertension is an important determinant of morbidity and mortality of people all over the world, (4). The risk of becoming hypertensive for individuals with a family history of hypertension has been estimated to be up to four times than average, (5,6). Hypertension belongs to the most frequent illness of circulatory system and in regard for it's spread in population and great effect, makes it as one of the most important medical, social and economical problems(7). In spite of turbulent progress which took place in diagnostic methods, pathogenesis of primary hypertension still remains not fully detected. There are many proofs, that the important role plays

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here is genetical factor. Thus the purpose of these studies were to find an answer for the questions; if young men of an age between 18_45 years with family history of hypertension have difference in systolic BP, diastolic BP and mean BP level in comparison to persons without such a family history,(8).

Methods:

122 subjects were involved in this study. Those with +ve FH of hypertension, male(35), female(27), with mean age of (45±8). Those with -ve FH of hypertension, male (20), female (8), with mean age of (45±7) . Control subjects (32) with mean age of (19±16). Blood pressure was measured for all subjects using mercury sphygmomanometer, with the subjects seated, after a 5minutes rest and the cuff at the level of the right atrium. SBP and DBP were recorded by a scaled Hg method, and the mean BP was calculated according to the formula (DBP+1/3(Pulse pressure)). Hypertension was defined according to the WHO lines (Persistant blood pressure above 140/90). (9). Height and weight were measured and BMI was calculated according to the formula (Weight in Kg/ (height)² in m). All subjects answered the questionere which consist of; age , sex, history of hypertension by years among the mother, father, grandmother and grandfather, brothers, and sisters. Duration of hypertension in years, drug history, occupation, level of education. Subjects were divided into two groups according to the family history, those with positive family history and those with negative family history of hypertension.

Results:

A total of 120 subjects, 62 reported a positive history of hypertension, 28 subjects reported a negative history of hypertension, 32 subjects reported as control. A family history was reported significantly more often by younger subjects, women, persons with formal education. Subjects who where not aware of their family history where significantly older and were more often from the rural areas. The subjects reported a family history of hypertension, compared with those reporting not having a family history of hypertension they were significantly younger and more often from the urban area. In addition they had a higher mean DBP. As expected normotensive subjects showed significantly lower BP than the two hypertensive groups. In addition, 24% of the hypertensive subjects qualified as hypertensive based on SBP elevation alone, 16% qualified as hypertensive based on DBP elevation alone, and 60% qualified as hypertensive based on elevation of both SBP and DBP. There were no significant differences between +FH and -FH hypertensive groups on these criteria.

Table2: Anthropometric data and demographic characteristics of subjects involved in this study.

	Positive family history (N=62)	Negative family history (N=62)	Normotensive Control subjects (N=32)	P value between +ve FH and -ve FH
Age (mean year) Gender	45±8	45±7	19±16	P>0.05
Men	35	20	8	
Women	27	8	24	
Mean blood pressure (mmHg)	141(95 ± 9)6	142(96 ± 12)5	111(72+8)5	SP>0.05 DP>0.05
SBP	127-166	122-176	90-126	NA
DBP	74-105	88-105	61-80	NA
Years of hypertension (mean)	5.5(5)	5.3(6)	N/A	P>0.05
Body mass index (mean)	26.7(3)	27.1(3)	26.1(2)	P>0.05

Notes : Data are presented as mean ± SD
*p value is significant at p>0.05 % .

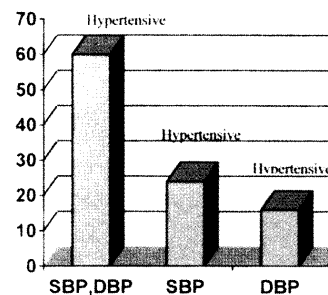


Fig.1: Relation of hypertension with SBP and DBP.
*60% Hypertensive depending on both SBP and DBP.
*24% Hypertensive depending on SBP.
*16% Hypertensive depending on DBP.

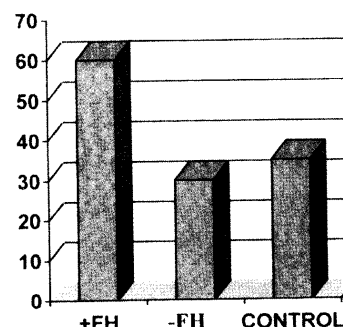


Fig.2: Relation of hypertension with +FH & -FH

Discussion:

Self reported family histories of hypertension, defined as recollection of the diagnosis in a first degree relative, are easy ascertained and several studies have demonstrated the accuracy of such histories, (10,11). Reporting a family history depends on the prevalence of hypertension, the number of family members, availability of diagnostic facilities, health seeking behaviour of patients, and on how familiar they are with diagnosis among their family members, (12). A review of studies on the effect of the family history on BP concluded that the majority of such studies couldn't demonstrate a directly increased risk for hypertension (13). There is evidence that hypertension is a relatively late manifestation of non communicable disease process, thus normotensive people with a family history of hypertension have been classified as normotensive hypertensives, (14). Blood pressure would be expected to rise with age and the prevalence of hypertension would thus be higher among first degree relatives, (15). Although family history is a predictor of increased susceptibility of hypertension because of an interaction between genetic triad, environmental factors and behavior, which are shared to a larger extent than among the general population, these factors are notoriously difficult to disentangle, (16). Height, weight, the body mass index were almost the same (intraance examination). The following studies proved that in the age of 18_30 strongly marked the differences in blood pressure. They are higher in young men with family hypertension history. It proves about undoubted genetic predisposition and contribution of this factor pathogenesis of primary hypertension (17).

Conclusions:

Individuals with a positive family history of hypertension are more likely to develop hypertension than offspring of normotensive subject. Health professionals should therefore utilize every opportunity to include direct family members in health education.

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