Research Article

Incidence of Hypertension and Risk Factor Assessment among Sedentary and Labour Population of Punjab

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Abstract: The present study was undertaken to determine the incidence and intensity of hypertension in sedentary and labour population of Punjab. 1000 subjects were studied and they were divided into two groups i.e. group A (sedentary class) and group B (labour class). All the cases were in the age group between 35 to 55 years. On comparative evaluation, hypertension increased with age, sedentary life style, smoking, non vegetarian diet, BMI and male gender. In this study, it was found that the incidence of hypertension is higher in sedentary group of people as compared to labourers which is due to the fact that decreased physical activity is directly related to high blood pressure.

Keywords: Hypertension, Sedentary, Labour population, Age

INTRODUCTION

Blood pressure means the force exerted by the blood column against a limit area of the vessel wall. It is usually measured in millimeters of mercury. The term blood pressure is used without any further qualification to denote arterial blood pressure. When describing pressure in other types of blood vessels, the type of vessel is also mentioned e.g. capillary pressure, venous pressure.

Hypertension is defined quite arbitrarily as being present when casual arterial blood pressure persistently exceeds 150/90 mmHg. Hypertension may be benign or malignant. It is also divided into primary (essential) and secondary. Hypertension is classified as essential when the causes are generally unknown. Essential hypertension is the most prevalent form of hypertension accounting for 90% of all cases of hypertension [1].

Hypertension is classified as secondary when some other disease process is involved in its causation e.g. Renal diseases (renal artery stenosis), glomerulonephritis, pyelonephritis, radiation nephritis, renal tuberculosis, renal cysts, hydrenephrosis, renal tumors, renal failure. Environmental factors such as pain, emotion, full bladder, posture, sleep all influence blood pressure [2].

Of all the physiological conditions exercise has the most powerful effect on arterial pressure. The effectiveness of most physical training varies with its intensity. Elbereta and Broun et al. [3] have given the same results after studying the effect of brief additional regular activity of low intensity upon the cardio respiratory performance of sedentary women.

Physical training is known to build up muscles in the body at the expense of fat to strengthen the heart and lower heart rate but no clearly defined long term blood pressure change have yet been proved [4]. Long term effect of exercise relationship to hypertension is uncertain although exercise training can lower blood pressure moderately [5].

MATERIALS AND METHODS

The present study was conducted to find the incidence of hypertension in different classes, businessmen, serving class and labourers and also attempt has been made to find the role of “Diet”, “Smoking”, “Family history”, “Age” and “Body mass index”. 1000 subjects (age group 35-55 years) were considered for the above project. 500 subjects were taken from sedentary profession; both businessmen and serving (clerks, bank employees) and 500 subjects from the labour group (labourers, rickshaw pullers).

They were divided into two groups,

Group A (sedentary class) which is further subdivided

Group A1 : Two hundred male sedentary businessmen
Group A2: Two hundred male sedentary serving subjects
Group A3: Fifty sedentary housewives
Group A: Fifty sedentary serving housewives

Group B (labour class) which is further subdivided into
Group B1: Four hundred male labourers
Group B2: One hundred female labourers

Following methods were used for measurement of blood pressure:

- A rough estimation of systolic blood pressure with palpatory method was done before the actual measurement of the blood pressure.
- Auscultatory method with a standard mercury sphygmomanometer checked for the accuracy with a well width of 12.5 cm. First appearance and fifth disappearance Korotkoff sounds were used to designate systolic and diastolic pressure.

Blood pressure above 150/90 mmHg was closed as hypertensive, pressure consistently between 150-160 mmHg systolic and 90-95 mmHg diastolic was referred as borderline.

Before recording blood pressure, the subject was made to take rest for at least 5 minutes and he should not have taken tea, coffee half an hour before recording the blood pressure. The subjects having raised blood pressure were repeatedly examined and three readings were taken to confirm raised blood pressure.

Identification data, socio economic status, intake of tea, coffee, alcohol, cigarette smoking, any history suggestive of hypertension and family history of hypertension, brief general physical examination, weight, height were obtained and recorded on a proforma.

RESULTS

Both systolic and diastolic blood pressures were recorded in sitting position. Subjects having systolic blood pressure less than 150 mmHg and diastolic blood pressure less than 90mmHg were considered healthy subjects whereas the subjects having systolic and diastolic blood pressure more than 150 mmHg and 90 mmHg respectively were considered as diseased subjects.

Table 1: Showing the number of hypertensive cases among various groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Total cases</th>
<th>Hypertensive cases</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>200</td>
<td>76</td>
<td>38.0</td>
</tr>
<tr>
<td>A2</td>
<td>200</td>
<td>36</td>
<td>18.0</td>
</tr>
<tr>
<td>A3</td>
<td>50</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>A4</td>
<td>50</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>B1</td>
<td>400</td>
<td>23</td>
<td>5.5</td>
</tr>
<tr>
<td>B2</td>
<td>100</td>
<td>6</td>
<td>6.0</td>
</tr>
<tr>
<td>Total</td>
<td>1000</td>
<td>147</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Incidence of hypertension in different age groups

<table>
<thead>
<tr>
<th>Age group</th>
<th>Age</th>
<th>Total No. of cases</th>
<th>No. of cases</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>35-45</td>
<td>457</td>
<td>25</td>
<td>17.0</td>
</tr>
<tr>
<td>II</td>
<td>46 and above</td>
<td>543</td>
<td>122</td>
<td>83.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1000</td>
<td>147</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Out of 1000 cases, 147 cases were found to be suffering from hypertension, out of which 25 cases which constitute 17% were of age group between 35 to 45 years whereas 122 cases which constitute 83% of total were of age group between 46-55 years. It is evident that the incidence of hypertension is much higher in elder people as compared to younger ones.

Table 3: Smoking among hypertensives

<table>
<thead>
<tr>
<th>Habit smoker/non smoker</th>
<th>No. of cases</th>
<th>% age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoker</td>
<td>86</td>
<td>59.0</td>
</tr>
<tr>
<td>Non smoker</td>
<td>61</td>
<td>41.0</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Incidence of smoking among hypertensive cases was found as follows:
Smokers were 59% i.e. 86 cases
Non smokers were 41% i.e. 61 cases
45 cases were found to be vegetarian that constitutes 30% and 102 cases (70%) were non vegetarian.

The family history was positive in 77 cases that constitute 52% whereas it was negative in 70 cases that constitute 48%.

DISCUSSION
The increasing morbidity and mortality from heart disease is a biggest challenge to the medical scientists all over the world. Hypertension is one of the most common factors causing atherosclerosis and narrowing of the blood vessels.

In our study we observed that the incidence of hypertension was more in people who had sedentary lifestyle than in people doing regular exercise. Exercise increases blood flow through all arteries of the body, which leads to release of natural hormones and cytokines that relax blood vessels, which in turn lowers blood pressure. Hypertension was significantly associated with increase in age in our study and the finding was consistent with several studies [6-9].

Increased salt intake and consumption of mixed/non vegetarian diet was found to be associated with hypertension in our study and similar observation was found in study by Gupta et al. [7]. Increased sodium chloride in the diet can lead to fluid retention, and also causes the arteries in the body to constrict leading to increase in blood pressure. Association of increased salt intake and hypertension was also observed in studies done by Ghosh et al. [6] and Saxena et al. [11].

In the present study no significant association was observed between hypertension and consumption of tobacco and alcohol, whereas in some other studies [12, 13] tobacco smoking and alcohol consumption were significantly associated with hypertension. This may be because of variations in consumptions of tobacco and alcohol among males and females as none of the females in our study reported using tobacco and alcohol.

CONCLUSION
In this study it was found that the incidence of hypertension is higher in sedentary group of people as compared to labourers. In the age group of 35-45 years the incidence of hypertension is much lower as compared to 45-55 years from which it is evident that hypertension usually starts often the age of 45. Vegetarians and nonsmokers have low incidence of hypertension as compared to non vegetarians and smokers. The body mass index is directly related to the...
incidence of hypertension. In males the severity of hypertension is more as compared to females.

REFERENCES