Risk Factors for Hypertension in a Rural Dwelling

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Abstract

Background: To assess the frequency and common risk factors for hypertension in a rural setup.

Methods: In this cross sectional study 239 people were included. A structured and pretested proforma was used to collect data regarding socio-demographic characteristics and information about different risk factors of hypertension. Information regarding blood pressure, weight and height was taken. BMI was calculated and WHO classification was used for categorization of hypertension.

Results: Males constituted 49.4 %, with a male to female ratio of 1:1.02. The mean age of the participants was 46.45±5.65 years. The subjects having < 45 years of age were 59%. In this sample 55 (23%) were obese and out of 118 males, 94 (79.66%) were smokers. Patients with hypertension (including pre-hypertensive) constituted 23%. Prevalence of oral contraceptive pills among women was found in 18 %.

Age was found a significant (p-value < 0.05) factor in the causation of hypertension. Males kept their predominance (p-value < 0.05) in having hypertension while smoking exhibited non significant (p-value > 0.05) association with hypertension. Obesity showed significant (p-value < 0.05) and use of contraceptive pills showed nonsignificant (p-value > 0.05) association with hypertension.

Conclusion: The prevalence of hypertension in this study was found to be 23%. This prevalence was significantly higher in older age subjects, male participants, obese subjects and in women who were not using contraceptive pills.

Key Words: Hypertension, Rural dwelling, Obesity,
The blood pressure was noted on the right arm using calibrated mercury sphygmomanometer. Two readings were taken after 5 minutes of rest in the sitting position. Weight was measured in kg and height was taken in Meters. Taking care of due prescribed precautions and standard techniques, BMI was calculated and WHO classification was used for categorization of hypertension.

Results

In this study a total of 239 subjects were included in which there were 118 (49.4%) males and 121 (50.6%) females. The mean age of the participants was 46.45±5.65 years. The subjects were divided into two age groups of < 45 years and ≥ 45 years. Subjects < 45 years of age were 141 (59%) and the subjects ≥ 45 years of age were 98 (41%). Out of 118 males, majority (79.66%) were smokers, exhibiting high rate of prevalence of smoking among rural masses. The main role was played by Huqa (Water pipe) and passing leisure time in chopal (Community Center). These adult smokers were indulging in this habit since childhood because they were involved in preparing the Huqa for smoking.

An important point was high percentage of hypertension cases (including pre-hypertensive) in present study sample that comes to about 23% and that too in a rural set up.

Table 1: Distribution of risk factors for hypertension (n=239)

<table>
<thead>
<tr>
<th>Variable</th>
<th>No</th>
<th>Hypertensive</th>
<th>%</th>
<th>X^2</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;45</td>
<td>141</td>
<td>23</td>
<td>16.0</td>
<td>32.6</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>&gt;45</td>
<td>98</td>
<td>32</td>
<td></td>
<td>9.26</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>121</td>
<td>18</td>
<td>14.9</td>
<td>31.4</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Male</td>
<td>118</td>
<td>37</td>
<td></td>
<td>6.31</td>
<td></td>
</tr>
<tr>
<td>Smoking *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smokers</td>
<td>94</td>
<td>33</td>
<td>35.0</td>
<td>16.7</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Non smokers</td>
<td>24</td>
<td>7</td>
<td></td>
<td>2.97</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obese</td>
<td>55</td>
<td>17</td>
<td>30.9</td>
<td>12.5</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Non-obese</td>
<td>184</td>
<td>23</td>
<td></td>
<td>10.3</td>
<td></td>
</tr>
<tr>
<td>Use of Contraceptive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pills **</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>96</td>
<td>15</td>
<td>15.6</td>
<td>13.6</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Yes</td>
<td>22</td>
<td>3</td>
<td></td>
<td>0.07</td>
<td></td>
</tr>
</tbody>
</table>

(S) Significant at 5% level of significance; * Only Males; ** Only females

From this sample of 239 subjects 55 (23%) was found obese. Prevalence of obesity among rural part of the population is attributed to the changing life style specially the increasing use of machinery in villages. Even now substantial number of farmers use motorcycle to commute between their houses and farms. Prevalence of oral contraceptive pills among women was found 18% i.e 22 women had used oral contraceptive pills out of 121 women (Table 1).

Age was found a significant (p-value < 0.05) factor in the causation of hypertension. As far as gender is concerned, males kept their predominance (p-value < 0.05) in having hypertension as compared with females. Smoking exhibited non significant (p-value > 0.05) association between it and hypertension. Obesity showed significant (p-value < 0.05) association in causation of hypertension.

Discussion

Hypertension is one of the important public health problems in the developed and industrial countries. In the developing countries, its impact was not fully felt due to the presence of rampant communicable diseases. With the control of communicable diseases and increased life expectancy with life style changes, hypertension is becoming one of the emerging problems with its implication for concomitant increase in risk of cardiovascular and renal diseases. 6

In present study prevalence of hypertension including pre hypertension comes to about 23% while in a study conducted in India among adult population at rural Wardha area related prevalence of hypertension among adult was noted as 20.6%. 12 Similarly the prevalence of hypertension in a study conducted in rural Ghana was 25.4%. 13 Another study documented the high prevalence of both hypertension and pre hypertension. In this study the age and sex adjusted prevalence of hypertension was noted as 32.2 percent. 3

The rise of B.P with age is said to be aging process due to atherosclerotic changes in blood vessels, especially in those under stress and unknown factors. This also could be because of the sedentary life style by the age of fifty five years and the subsequent increase in BMI. Also increased levels of stress in the family due to social factors such as providing higher education, marriages etc. 8

Non significant (p-value > 0.05) association of use of contraceptive oral pills with hypertension in present study can be attributed to irregular use or recent use of contraceptive pills, because of socio cultural background. Different demographic characteristics like age, gender and BMI have been noted as significant risk factors in a cross sectional research conducted in Istanbul Turkey. 17 Studies revealed significant
association of hypertension with BMI and obesity. Study conducted in Malaysia reveals that prevalence of hypertension increases with increasing age. In central Malaysia the prevalence of hypertension among those aged 55 years and above living in a community was shown to be 25.6% and 51.1% among those living in old folk’s homes. The prevalence of hypertension among the elderly in this study is comparable with the findings of another study which was conducted in northern Malaysia. Similarly a health survey in England and in the United States also reported strong correlation between age and blood pressure.

Conclusion
Increasing frequency of hypertension in rural population can be ascribed to change of life style resulting from more and more mechanization and use of motor transportation and change in the dietary habits of people and other related factors.

References