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AN EPIDEMIOLOGICAL STUDY OF HYPERTENSION AMONG INDIVIDUALS AGED 20 YEARS AND ABOVE IN URBAN SLUM, RANIGARI THOTA, VIJAYAWADA CITY

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ABSTRACT: INTRODUCTION: Hypertension is most common cardiovascular disease which accounts for majority of cardiovascular deaths & disabilities worldwide. **OBJECTIVES:** To study the prevalence of hypertension in an urban slum and various risk factors influencing the occurrence of hypertension among the study subjects. **MATERIALS & METHODS:** A community based cross sectional study. **PLACE OF STUDY:** Ranigari thota, an urban slum in vijayawada city. **PARICIPANTS:** 800 participants aged 20 & above. **STUDYPERIOD:** Dec 2012 to May 2013; a house to house survey was conducted and interviewed the participants by systematic random sampling method using pretested questionnaire. Two independent Blood Pressure readings were taken in sitting position by visiting each participant during house visit. Hypertension was defined as systolic blood pressure more than or equal to 140 mm of hg, or diastolic blood pressure more than or equal to 90mm of hg or those individuals currently taking antihypertensive treatment. **STATISTICAL TESTS:** Percentiles, chi square tests on epi info 2007. **RESULTS:** Prevalence of hypertension in the study subjects was 25.37%. statistical analysis identified various factors significantly associated with hypertension were age, sex, marital status, education, nature of work, occupation, type of family, BMI, waist to hip ratio, alchcohol intake, tobacco, diabetes mellitus, mental stress, & salt intake. **CONCLUSION:** The overall prevalence of hypertension in the study subjects was 25.37%.

KEYWORDS: Blood Pressure, Prevalance, Hypertention.

INTRODUCTION: Hypertension is the most common cardiovascular disease, emerging as a major public health problem in developing as well as developed countries. The W.H.O report 1998 states that considering the prevalence of any disease, hypertension rank fourth in the world.¹ As long as it is within normal limits it helps our survival but when it increases beyond certain limits it is detrimental to our health.² Hypertension is significant public health problem in urban and rural areas of India. It is directly responsible for 57% of all stroke deaths and 42% of coronary heart disease deaths. It is also leading cause of blindness, renal failure and congestive cardiac failure.^{1,3}

Because of the changing life style, environment, industrialization and urbanization the prevalence of Hypertension is increasing constantly. Field based studies on the prevalence of Hypertension are still scarce and more Field based studies are required to highlight problem of Hypertension. Hence this field based epidemiological study was undertaken. The Hypertension was defined according to 7th report joint national committee for detection, evaluation and treatment of high blood pressure, as systolic blood pressure more than or equal to 140mm of Hg or diastolic blood pressure more than or equal to 90mm of Hg or those individuals currently taking anti-Hypertensive treatment.³

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MATERIALS AND METHODS: It is a community based cross sectional study done in Ranigarithota urban slum which was selected by the lottery method. Required sample size was 800 based on the prevalence of hypertension 21.25% as observed in the pilot study. Ranigarithota was have 3820 houses with total population of 8029 (20years and above). A house to house survey was conducted by systematic random sampling method. Out of the 830 usual residents in the study area 30 (3.75%) were excluded due to reasons like non-availability, inspite of three successive visits, unusual residents, and refusal to get examined.

The overall response rate was 96.25% and total 800 persons of 20years and above from 340 houses (Every 10th house hold was selected in the study sample) were interviewed using a pretested questionnaire and Blood pressure was measured by using mercury sphygmomanometer, pulse obliteration and auscultation method in sitting position. The average interval between two blood pressure readings was at least 10 minutes. The blood pressure measurements were done strictly as per WHO criteria, the mean of two readings was used for analysis and the subjects were classified according to 7th report of joint national committee classification and data was entered and analyzed using epi info.

RESULTS: The age wise distribution of study subjects along with prevalence of each group is shown in table 1. Out of 800 study subjects examined, 203(25.37%) were having Hypertension. The prevalence of hypertension was increased significantly with increasing age. The lowest prevalence of hypertension was 3.59% in the age group of 20-30 years, and highest prevalence of Hypertension was 68.93% in the age group of more than 60years. Highly statistically significant association ($p < 0.0001$) was observed between age group and Hypertension.

Age group	Hypertensives N%	Normotensives N%
20-30	11 (3.59)	295 (96.41)
31-40	24 (15.19)	134 (84.81)
41-50	49 (37.40)	85 (62.60)
51-60	48 (47.06)	54 (52.60)
60+	71 (68.93)	32 (31.07)
Total	203 (25.37)	597 (74.63)

Table 1: Age-wise prevalence of hypertension among study subjects

Though the prevalence of blood pressure in males (30.86%) was more compared to females (23.98%), it was not statistically significant ($P > 0.05$).

The prevalence of blood pressure in married (21.28%) was less compared to single (50.00%) ($P < 0.0001$).

Significantly more number of respondents 50.72% who have sedentary nature of work are hypertensive's when compared to that of moderate(23.03%) and heavy work (16.67%)($P < 0.0001$).

The prevalence of hypertension was significantly high in unemployed (29%) as compared to employed (20.58%). ($P < 0.01$).

Among the families interviewed majority of hypertensives are from joint families (34.16%) compared to nuclear families (22.41%).

Significantly more number of respondents (31.91%) with B.M.I>25 were hypertensives compared to 24.50% respondents with <25 were hypertensives.

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Significantly more number of respondents (13.76%) with waist-hip ratio >0.8 are hypertensive's compared to those (28.97%) with <0.8 .

Respondents who consume Alcohol (65.38%) for >10 years are hypertensive's compared to that of those Consuming Alcohol for <10 years (32.14%). ($P<0.05$)

Both Diabetes mellitus and mental stress had a positive association with hypertension.

Distribution of Hypertension among study subjects >5 gms (25.81%) and <5 gms (19.64%) of salt Daily intake.

Variables	Hypertensives N%	Normotensives N%
Sex	Males 50 (30.86)	112 (69.14)
	Females 153 (23.98)	485 (76.02)
Marital Status	Married 146 (21.28)	540 (78.72)
	Single 57 (50.00)	57 (50.00)
Nature of Work	Sedentary 35 (50.72)	34 (49.28)
	Moderate 167 (23.03)	558 (76.97)
	Heavy 1 (16.67)	5 (83.33)
Occupation	Unemployed 132 (29.00)	323 (70.98)
	employed 71 (20.58)	274 (79.42)
Type of Family	nuclear 134 (22.41)	464 (77.59)
	Joint 69 (34.61)	133 (65.84)
BMI	>25 30 (31.91)	64 (68.09)
	<25 173 (24.50)	533 (75.50)
Waist to Hip ratio	<0.8 26 (13.76)	163 (86.24)
	>0.8 177 (28.97)	434 (71.03)
Duration of Alcohol consumption	<10 years 9 (32.14)	19 (67.86)
	>10 years 17 (65.38)	9 (34.62)
History of Diabetes mellitus	present 9 (56.25)	7 (43.75)
	absent 194 (24.74)	590 (75.26)
Mental Stress	present 200 (42.28)	273 (57.72)
	absent 3 (0.92)	324 (99.08)
Daily salt Intake	>5 grams 192 (25.81)	552 (74.19)
	<5 grams 11 (19.64)	45 (80.36)

Table 2: Study variables and its association with Hypertension

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DISCUSSION: Among the 800 study subjects who are interviewed prevalence of hypertension was 25.37% Akilew Awoke et al showed overall prevalence of hypertension was 28.3%(20012).⁽⁴⁾ Singh et al(1995)⁵ showed 23.7% prevalence of hypertension in north India in the age group 25 to 64 years. Shantirani. CS et al (2003)⁶ reported overall prevalence of hypertension of 21.1%.

In the present study prevalence of hypertension is found to increase significantly with increased age. Gupta Sp et al (1984)⁷ reported that mean systolic and diastolic blood pressure increased with increased age. In a study by Gilberts in south Indian in 1994⁸, blood pressure rose from 3.7% in 20-29 year age group to 37.3% in those aged >70 years. Similar findings of upward trend of blood pressure with increased age has been shown by whelton (1994), chada (2001), shantirani (2003), hazarika (2000), Bhat (2002), Gurav(2001), pickering TJ (1990).

In the present study prevalence of hypertension more among male study subjects. This Study observation correlated with that Gupta et all (2003),⁹ shantirani (2003),⁶ Yuvaraj BY et al (2010).¹⁰

In the present study prevalence of hypertension more among single subjects compared to married subjects. The findings of present study correlates well with the studies of Hazrika (2002),¹¹ Kalavathy (2000).¹²

In the present study prevalence of hypertension is significantly more among study subjects with sedentary nature of work. Similar findings were reported by Gupta R et al (1995-2002),¹³ Singh RB (1997).¹⁴

In the present study prevalence of hypertension is significantly more among unemployed compared with employed. Similar findings were reported by Hazarika in Assam in (2002).¹¹

In the present study prevalence of hypertension is significantly more among the study subjects with joint type of family. It may be due to increased number of elderly subjects in the family structure. Further studies have to be conducted to find out the association between hypertension and type of family.

In the present study prevalence of hypertension is significantly more among the study subjects with BMI >25%. Similar findings were also found by Bhat (2002),¹⁵ Prabhakaran et al (2005).¹⁶

In the present study prevalence of hypertension is significantly more among the study subjects with waist to hip ratio >0.8. The findings of an agreement with the findings of shantirani CS et al (2003),⁶ Prabhakaran et al(2005).¹⁶

In the present study prevalence of hypertension is significantly more among alcoholics of longer duration. Similar findings were reported by singh RB et al (1997),⁵ Kiel U et al (1998), Hazarika (2002),¹¹ PPJoshi and Kulkarni (2002).

In the present study prevalence of hypertension is significantly associated with Diabetes. Similar findings were reported by Gupta R et al (2004),⁹ shantirani (2003),⁶ Prabhakaran D et al (2005).¹⁴

In the present study prevalence of hypertension is significantly high among the subjects with mental strain. Similar association has been observed by Mathews kA et al (1987).¹⁷ Perini et al (1991),¹⁸ TN Mehrotra(1996).¹⁹

In the present study prevalence of hypertension is seen more among the study subjects consuming daily salt intake of >5grams. The prevalence of hypertension is seen among the subjects with addition of salt in the kitchen alone. This difference is found to be not significant. Currently two schools of thought are prevailing in explanation of association between salt intake and hypertension

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Beard et al, Dahl E uison wt al, yamori et al, meenely and Battrabee and freis have reported that higher salt intake influences blood pressure. Simpson summarized the findings of many epidemiological studies in USA, Europe, and New Zealand reported that they have failed to demonstrate clear relationship between salt intake & blood pressure.

CONCLUSION: In this study the prevalence of hypertension is 25.37%. The prevalence of hypertension increased gradually with increase age, single, sedentary, unemployed, joint families, waist to hip ratio, Alcohol, Diabetes mellitus, and mental stress.

RECOMMENDATIONS: Health education is the important tool to reduce the risk factors of hypertension and more IEC campaigns should be conducted to help the people to maintain a healthy lifestyle and promote healthy aging. Prepare and implement a community based “high risk” screening programme to detect population who are at risk.

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