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COMPLIANCE TO HYPERTENSION TREATMENT; AN EXPERIENCE IN A RURAL COMMUNITY OF WEST BENGAL

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Abstract

Introduction: Lifelong Compliance to Hypertension treatment is essential to avoid complications. Objectives: To find out the treatment pattern of hypertension in a rural community of West Bengal and to detect the compliance to hypertension treatment and its outcome.

Material & Methods: A Community based cross-sectional study was conducted in a village (Dearah), in Singur Block, Hoogly district of West Bengal. By house to house visit, every adult person of the village ≥ 18 years was contacted and their BP measured by standard techniques. A total of 311 persons with hypertension were interviewed by a pre-tested semi structured schedule. Data was analyzed by standard statistical methods (frequency distribution table, proportion) and suitable statistical tests. **Results:** Only 37% of the hypertensives were aware of their BP and 30% treated. Majority (about 80%) were treated by allopathic general practitioners. Medicines (100%) and Salt restricted diet (96.8%) were the main advices received. Stated compliance was better for investigations. Financial problem was the major reason for non-compliance to drugs and investigations. Overall, only 17% of the treated hypertensives had their BP controlled with significant sex difference favouring males. **Conclusions:** Present study highlights the poor situation regarding hypertension awareness, treatment compliance and control in a rural community of West Bengal.

Key Words: Hypertension; treatment; compliance; rural community

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Introduction:

Every person has Blood Pressure (BP), the lateral pressure exerted by the flowing blood on arterial wall, but probably few are aware of it unless needed. The most common cardiovascular ailment is hypertension, a very important *preventable* cause of cerebrovascular accidents (CVAs) and coronary heart diseases (CHDs), responsible for mortality exceeding about 50% of total deaths in some industrialized countries. Hypertension is classically an "*iceberg disease*"-even in most developed countries, only half of the hypertensive persons are aware of their condition [1]. Obviously the submerged portion is much more in a developing country like India with poor literacy, awareness and medical services. The only way to check it is to "Know your own BP and control it if raised throughout your life." Our civilization demands it for a healthy adult and geriatric population. Treatment of one's hypertension especially compliance to a regular

treatment schedule is essential for this. Here is an experience gathered from a study of hypertension and its management in a rural community of West Bengal (WB).

Material & methods:

A cross-sectional study was undertaken during March'01 to February '02 in a village (Dearah) of Singur Block, Hoogly District, WB. It was a randomly selected village in Singur Rural Health Unit & Training Centre (RHU&TC), the field practice area of All India Institute of Hygiene & Public Health (AIIH&PH), Kolkata-73. Following clearence from institutional screening committee of AIIH&PH Kolkata, the study was conducted by house-to-house visit, contacting each and every adult person (Census) of the village ≥ 18 years. (Total 1201, Male=597 and Female=604 of which 311 were found to be hypertensives using 140/90 criteria [6]) Persons < 18 years of age were excluded from the study. After informed consent of individuals, a pre-tested semi-structured schedule was used to collect data regarding awareness of self-BP readings. Blood pressure of every adult was measured by Mercury manometer using standard technique**.** [2 3 4] Pre-treatment BP was recorded for those who were on treatment. Data collected, was tabulated and analyzed using standard statistical methods (frequency distribution table and proportion).

Results:

A total of 132 persons (11%) were found to be hypertensive with relatively rigid criteria (i.e. Systolic BP ≥ 160 mm Hg. and/or Diastolic BP ≥ 95 mm Hg. or on anti-hypertensive drugs [5]) in that village with little higher prevalence in females (12.4%) as compared to males (9.5%). With more liberal criteria (i.e. Systolic BP ≥ 140 mm Hg. and/or Diastolic BP ≥ 90 mm Hg. or on anti-hypertensive drugs[6]), the prevalence was 25.9% (26.3% for females & 25.5% for males). These differences were statistically insignificant (p≥0.05).

Table 1 shows that among these hypertensives, the awareness of hypertension was only about 37% which was more among females (42.8%) as compared to males (31.6%). One fifth of these (7.4% of total) were untreated in spite of being aware which was also more for the females as compared to males (9.4% vs. 5.3%) Overall about 30% hypertensives were treated, more females than males (33.3% vs. 26.2%). All these differences are statistically insignificant (p≥0.05). The source of treatment for the treated hypertensives is also depicted in table 1. Out of 93 treated patients, majority (74, 79.6%) were treated by allopathic general practitioners and only 8(8.6%) were treated by allopathic specialists. Treatment by homeopathy (9, 9.7%) and quacks (2, 2.1%) comprised a small minority and exclusively for females. Males were treated slightly more (about 10%) by allopathic physicians but it is not statistically significant (p≥0.05). Table 2 shows the treatment advices received and their compliance status by the treated hypertensives. Important advices received by the patients were medicines (100%), salt restrictions in diet (96.8%), physical exercise (22.6%), restriction of callorigenic foods e.g. sweets, potato, fat, rice (22.6%). Interestingly, 9(9.7%) patients were advised irregular (SOS) treatment e.g. medicines given for high BP and withdrawal when BP got controlled. Cessation of smoking was advised to only 3(3.2%) patients. Among the major advices for investigations, blood sugar was the commonest (54.8%) followed by electrocardiogram [ECG] (30.1%) and hemogram (10.7%). Overall compliance to medicines was 75.3% [72.6% for regular medicines and 100% for irregular (SOS) medicines]. It was 33.3% for physical exercise, about 77% for salt restriction and 67% for callorigenic food (Rice/Fat/Potato/Sweets) restriction. The compliance figures for investigations were 86.3% for Blood Sugar, 92.8% for ECG, 70% for Hemogram and 71.4% for routine examination of Urine. Table 3 shows the reasons for poor compliance for treatment advices. Financial problem was an important reason for non-compliance to Medicines as well as Investigations. Ignorance of regularity and unacceptability of lifelong medicines were also important. Less salty diet and Physical exercise were unacceptable for all. Table 4 shows the status of blood pressure control among treated hypertensives. Overall about 17**%** of the treated patients had their BP controlled which is

significantly more among males as compared to females (27.5% vs 9.4%; p=0.044)

Table1: Awareness and Treatment status of Hypertensives

Gender	Male [n=152]	Female [n=159]	Total [N=311]	Significance
	No (%)	No (%)	No (%)	
Awareness				
Not Aware	**104(68.4)**	**91(57.4)**	**195(62.7)**	**Z=1.92; p = 0.054**
Aware	**48(31.6)**	**68(42.8)**	**116(37.3)**	
Treatment				
Aware & untreated	**8(5.3)**	**15(9.4)**	**23(7.4)**	**Z=1.16; p=0.244**
Aware & treated	**40(26.3)**	**53(33.3)**	**93(29.9)**	
Source of Treatment	**[n=40]**	**[n=53]**	**[n=93]**	
Allopathic General Practitioner	**35(87.5)**	**40(75.5)**	**74(79.6)**	**Z=1.22 ; p=0.221**
Allopathic Specialist	**5(12.5)**	**2(3.8)**	**8(8.6)**	**Z=1.19; p=0.236**
Homeopathy		**9(16.9)**	**9(9.7)**	**Z=1.18; p=0.239**
Quacks	-	**2(3.8)**	**2(2.1)**	-

Table 2: Advices received and its Compliance among treated Hypertensives (n=93)

Advices received	No. (%)	Compliance		
		Followed		
		Completely	Incompletely	Not
Medicines Regular	**84(90.3)**	**61(72.6)**	**20(23.8)**	**3(3.6)**
Irregular	**9(9.7)**	**9(100.0)**		
Total	**93(100)**	**70(75.3)**	**20 (21.5)**	**3(3.2)**
Physical Exercise	**21(22.6)**	**7(33.3)**	-	**14(66.7)**
Dietary Restrictions				
Salt	**90(96.8)**	**69(76.7)**	**5(5.5)**	**16(17.8)**
Rice/Fat/Potato/Sweet	**21(22.6)**	**14(66.7)**	**2(9.5)**	**5(23.8)**
Egg/Red meat	**3(3.2)**	-	-	**3(100.0)**
No Smoking	**3(3.2)**	-	-	**3(100.0)**
Investigation				
Blood Sugar		**51(54.8)**	**44(86.3)**	**7(13.7)**
ECG		**28(30.1)**	**26(92.8)**	**2(7.2)**
Hemogram		**10(10.7)**	**7(70.0)**	**3(30.0)**
X-ray/USG		**7(7.5)**	**2(28.6)**	**5(71.4)**
Urine (Routine)		**7(7.5)**	**5(71.4)**	**2(28.6)**
Serum Lipids		**5(5.4)**	**2(40.0)**	**3(60.0)**

Table 3: Reasons for partial and non-compliance to treatment advises

Advises	Reasons	No(%)
Medicines (n=23)	**Can not buy medicines**	**9(39.1)**
	Ignorant of Regular treatment	**9(39.1)**
	Lifelong medicines unacceptable	**5(21.8)**
Dietary Restrictions		
Salt (n=21)	**Less salty diet unacceptable**	**21(100.0)**
Rice/Fat/Potato/Sweet (n=7)	**Can not leave sweet, potato**	**4(57.1)**
	Can not tolerate wheat flour	**3(42.9)**
Physical Exercise (n=14)	**Not feasible (practicable)**	**14(100.0)**
Investigations (n=10)	**Monetary problem**	**7(70.0)**
	Manpower problem (None to accompany)	**3(30.0)**

Table 4:Control of Blood Pressure in treated hypertensives (n=93)

Sex	No	BP Controlled [<140/90 mmHg] No. (%)	Significance
Male	**40**	**11 (27.5)**	**Z =2.01**
Female	**53**	**5 (9.4)**	
Total	**93**	**16 (17.2)**	**p=0.044**

Discussion:

Present study revealed that as a whole only about 37% of the hypertensives were aware of their own BP reading, which was similar for males and females. Awareness (ranging from 4.9% to 25%) among hypertensives residing in the rural areas have been noted by previous workers in India and abroad [7-11]. A relatively better awareness were observed from rural studies conducted in Chile (43%) [12], Malaysia (62%)[13] and Greece (60.8%).[14]

Present study revealed that out of 116 aware hypertensives, 93 (80.2%) were treated which comes to about 30% of all hypertensives. Similar figures were also observed in Chile (26.1%)[12] and Greece study (27.5%)14 whereas a relatively lower figure (12.5%)[11] was observed in a China study. Most of the previous studies lack data on the sources of treatment and treatment advices received except medicines. One dangerous practice was observed in this study where about 10% of the treated hypertensives were advised irregular (SOS-

on rise of blood pressure) medicines and withdrawn after control of blood pressure which is a strong risk factor of complications esp. cerebrovascular accidents (CVA) and coronary heart diseases (CHD) There might be a popular demand of the same from the patients but must be strongly discouraged by health personnel. Lifestyle modifications especially physical exercise and cessation of smoking were advised to minority of the patients. Regarding stated compliance to treatment advices, medicines, restriction of intake of salt and callorigenic foods and investigations were the major ones whereas it was poor for physical exercise, cessation of smoking and atherogenic foods (egg, red meat). These factors as well as the reasons of non compliance to treatment advices are practically not addressed in most of the studies on hypertension in rural areas. Among women aged >30 years in a peri-urban colony of Chandigarh, Thakur et al [15] observed that major reasons for discontinuation of treatment were ignorance about regular treatment (33.3%), high cost of medicines(19.4%) and none to accompany a trip to hospital(9.7%). Present study also revealed almost similar figures. A high non-compliance rate of 50% was observed in USA among hypertensives for all anti-hypertensive measures.[16] Control of blood pressure among the treated hypertensives (n=93) was observed to be poor in this study. Only about 17% of the hypertensives had their BP controlled which was significantly more among the males as compared to females (27.5% vs. 9.4%; p=0.044) It was observed to be 25% in rural Haryana[7] and 27% in rural Greece study. 14 In rural Haryana, Gopinath et al [17] observed the BP control to be only 2.6% but with continued health education the figure rose to 45.4% after 5 years. Control of hypertension ranging from 3% to 20% were also observed in studies conducted in rural China[11], rural Chile[12] and in USA.[18]

Conclusion:

Present study revealed that 63% of the hypertensives were not aware of their BP reading, leaving them at a higher risk of developing CVAs and CHDs. A more than 25% prevalence of hypertension and a probable rising trend owing to unhealthy life-styles of modern civilization are of real concern. At every opportunity of medical contact with a subject, BP should be measured and informed to the person including education regarding the necessity of regular check-up. Community based hypertension detection programme is a reasonable but costly option. More rural community based surveys may be feasible alternatives. Proper implementation of the "National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)" [19] can go a long way in this direction.

Lifestyle modifications especially regarding physical exercise and cessation of smoking need to be highlighted by all concerned in all occasions of patient-contacts. Although the usual "Indian" mindset often can not accept any measure without drugs especially when there is a popular belief that a panacea drug is available for all types of ailments. Proper training and motivation of the physicians may be good measures in this respect. Control of blood pressure can only be assured by regular checking up of BP whenever and wherever possible and feasible. We should try to change the usual mindset of the people that remaining apparently well does not mean that his/her BP is controlled; the only way is to have a regular BP check up.

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