

A Study of Clinicosocial profile of young female hypertensives in a tertiary care hospital

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Abstract : Background: One of major contributing factors for the growing burden of cardiovascular disorders is increasing prevalence of hypertension and involvement of younger people. Despite its high prevalence in the population, hypertension in women has received less attention than hypertension in men. The primary objective of this study was to assess the sociodemographic and clinical profile of young female hypertensives.

Methodology: This was a cross sectional study carried out in the Cardiology OPD of a tertiary care hospital in Kolkata, West Bengal. Sixty four young female hypertensive patients (aged between 20 to <40 years) were interviewed and their blood pressure was measured. **Results:** The mean systolic blood pressure and mean diastolic blood pressure was 144.1 ± 24.6 mmHg and 79.9 ± 12.4 mmHg respectively. Newly detected hypertensives were 21.4%, out of which 39.1% were stage 1 hypertensives and 60.9% were stage 2. **Conclusion:** Though men are more commonly affected by hypertension, a significant number of females are also affected. By modification of lifestyle, diets, regular exercise and by use of appropriate drugs at right time, majority of hypertensive cases in females specially in the young age group of below 40 years can be controlled and thus major complications can be prevented.

Keywords: Hypertensives, young females, clinicosocial profile

I. Introduction

According to World Health Report 2002, cardiovascular diseases (CVDs) will be the largest cause of death and disability by 2020 in India. In 2020 AD, 2.6 million Indians are predicted to die due to coronary heart disease which constitutes 54.1 % of all CVD deaths. Nearly half of these deaths are likely to occur in young and middle aged individuals (30-69 years) ¹. Hypertension, though a common medical problem in the elderly, is not limited to the elderly population, but also involves younger people. As the prevalence of hypertension is seen to be rising in younger individuals, more and more information regarding the profiles of young hypertensives is needed. In 2002, the age-adjusted prevalence of hypertension was 30% in men and 34% in women ². In India, the awareness of hypertension, its risk factors and complications is very poor. Scanty information is available regarding the prevalence of hypertension and its complications in younger Indians. Despite its high prevalence in the population, hypertension in women has received less attention than hypertension in men. ³⁻⁵

The primary objective of this study was to assess the clinicosocial profile of young female hypertensives for gaining better insight of the factors related to this disease process.

II. Materials and Methods

This was a cross sectional study carried out in the Cardiology Outpatient Department of R.G. Kar Medical College, a tertiary care hospital in Kolkata, West Bengal over a period of 6 months from December 2010 to May 2011. After obtaining necessary permission from institution ethical committee, all young female hypertensive patients (aged between 20 to <40 years) attending the Cardiology OPD during this period were selected (n =646). Selected subjects were either newly detected hypertensives or previously detected hypertensives on medications or without medications; critically ill hypertensive patients and prehypertensives were not included in this study. The purpose of the study was explained to them; informed verbal consent was taken and they were interviewed using a predesigned and pretested questionnaire (after translation to local language) to extract basic socioeconomic and demographic information, and their prescriptions were scrutinized for relevant clinical information's like presenting complaints, complication suffered etc; information regarding diabetes and dyslipidemia were also included in case of those patients where relevant prescriptions and lab reports were found. Hypertension was defined as per JNC 7 guidelines (Normal: Systolic and diastolic < 120/80, Prehypertensives: systolic 120-139 or diastolic 80-89 mm of Hg, Stage-1 hypertensives: systolic 140-159

or diastolic 90-99 mm of Hg, Stage-2 hypertensives: systolic 160 or diastolic 100 mm of Hg) ⁶ and was measured using the auscultatory method with a standardized calibrated mercury column type sphygmomanometer and an appropriate sized cuff encircling at least 80% of the arm in the seated posture, with feet on the floor and arm supported at heart level; two separate measurements were done and the average of the two measurements was recorded. In some cases, where high blood pressure was recorded for the first time, the researchers checked the blood pressure more than twice and took the average of the two close readings. Standing height and weight were measured. Body weight was measured (to the nearest 0.5 kg) with the subject standing motionless on the weighing scale, feet about 15 cm apart, and weight equally distributed on each leg. Subjects were instructed to wear minimum outerwear (as culturally appropriate) and no footwear while their weight was being measured. Height was measured (to the nearest 0.5 cm) with a portable stadiometer, with the subject in an erect position against a vertical surface, and with the head positioned so that the top of the external auditory meatus was level with the inferior margin of the bony orbit. The body mass index (BMI) which is expressed in kg/m² was used to define obesity and overweight according to recommendations as given by World Health Organization. Waist circumference was measured at the midpoint between the inferior margin of the last rib and the top of the iliac crest. Hip circumference was measured at the largest posterior extension of the buttocks. Waist and hip circumferences were measured to the nearest 0.1 cm. The waist-to hip ratio was calculated using the formula, WHR = waist circumference (cm) /hip circumference (cm). Physical activity was coded into the following categories: sedentary (walking, job involving desk work, mainly domestic activities, viewing television, or reading); moderate level of physical activity (home maintenance activities, gardening, feeding cattle or livestock, washing linen/clothes by hand, carrying firewood, etc.); heavy or greater level of physical activity (agricultural work in fields, pulling a cart or rickshaw, quarry work, cycling; rowing; carpentry; masonry, etc). New cases were defined as those cases who had never been previously diagnosed as hypertensives or had never consumed any hypertensive drugs. Statistical analysis was done by using Microsoft Excel 8.0 and Medcalc 11.4 software.

III. Results

The mean age of the selected patients was 34.1 ± 4.69 years. The mean systolic blood pressure and mean diastolic blood pressure was 144.1 ± 24.6 mmHg and 79.9 ± 12.4 mmHg respectively. **Table 1** presents the socio demographic profile of the selected patients. Majority of the patients belonged to the age group (30- <40 years), while 76% were from urban areas. Patients were mainly Hindus while women with > 2 child were lesser in number. About 75% of the subjects were educated up to secondary level of education, while majority were housewives. Physical activity of most of the women were sedentary in nature while 56.2 % of the women had a family income of `4151- `6918 as per modified Kuppaswamy's scale(2010). Majority were non vegetarian, and consumed excess salt(> 5 gm/day). Family history of hypertension was present in 36.2% of the participants. Addiction to any form of tobacco(chewable & non chewable)/alcohol/both and history of oral contraceptive use were present in 8.97 % and 13.3% of the subjects respectively.

Table-2 presents the clinical profile of the selected young female hypertensives. Newly detected hypertensives were 21.4%, out of which 39.1% were stage 1 hypertensives and 60.9% were stage 2. More than 50% of the participants were either overweight/obese, while waist hip ratio(WHR) were >0.85 in 64.1% of the subjects. Commonest initial presenting complaint were nonspecific (in 67.9% of the subjects) followed by headache, breathlessness. Diabetes was present among 12.1% of the women (n=478), while 33.5% were dyslipidemic(n=498). Major complications were ischemic heart disease(4.95%) and renal complications. About 65% of the patients were having two or three antihypertensive drugs.

Figure 1&2 presents the comparison between the median, quartiles, maximum, minimum systolic and diastolic blood pressures of the two different age groups(20- <30 & 30- <40 years), waist hip ratio categories(<0.85 & >0.85) and BMI categories(< 25kg/m² & ≥25kg/m²) by Box and Whisker plots respectively. Variations were found which can be further tested for association in future studies.

IV. Discussion

There is a continuous, strong, and graded relation between blood pressure and cardiovascular disease, but no clear threshold value separates hypertensive patients who will experience future cardiovascular events from those who will not. Hypertension prevalence is lower in the rural Indian population, although there is a steady increase over time here as well. Pooling of epidemiological studies show that hypertension is present in 25% urban and 10% rural subjects in India. The prevalence of hypertension increases with age, rising exponentially after thirty years of age ². The age-related rise in blood pressure, particularly systolic blood pressure and pulse pressure, contributes substantially to the age-related increase in risk of heart attack, heart failure, and stroke in middle-aged and elderly women. Two unique hypertension-inducing mechanisms—pregnancy and the use of oral contraceptives—also contribute to the global problem of high blood pressure in women. The pathophysiology of hypertension in women differs in other ways from that in men—women tend

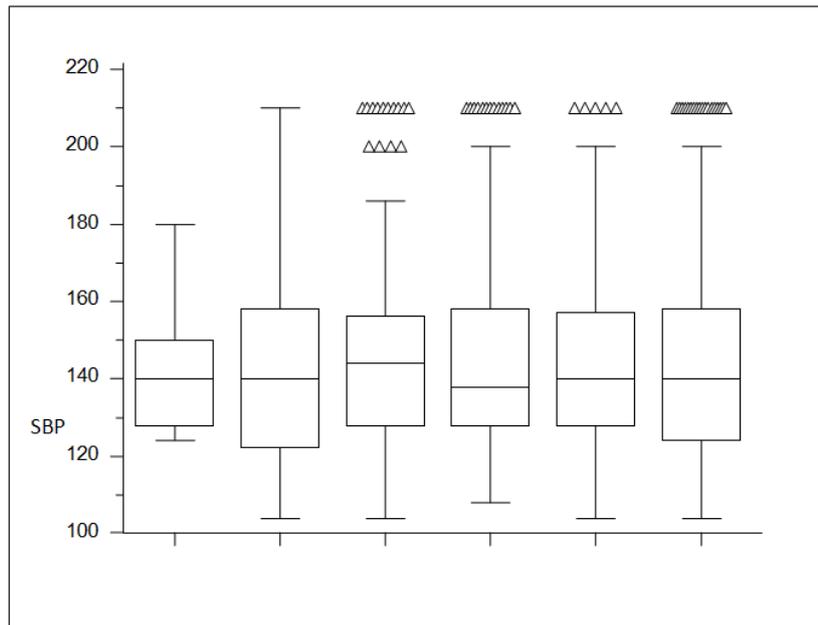
to have more labile blood pressures and a higher prevalence of the white coat phenomenon⁷⁻⁸. Women are more likely to be salt-sensitive; and are more likely to have low renin, high volume hypertension than men⁹. Certain important findings that was found in our study was that nonspecific symptoms and headache being the major presenting symptoms while higher percentage of newly detected cases were having stage 2 hypertension. WHR and BMI were more than normal in more than half of the subjects. Majority of the females in our study were married, housewives, urban based, having 1-2 child, being nonvegetarian, with sedentary lifestyle and consuming excess salt. However the other factors could be equally important like association of OCP use with elevated pulse pressure as found in “The Enigma study”¹⁰ as well as relation of income, education with hypertension as found in a Korean study¹¹. Continuous positive relationship of markers of obesity (body-mass index, waist hip ratio) with major coronary risk factors like hypertension has been shown in many studies¹². An African study also showed that with increase in parity, SBP increased¹³. Thus, it is important to identify the sociodemographic factors and clinical aspects in relation to hypertension and perhaps this study will help in the initiation of further in-depth analysis of such factors in relation to young female hypertensives, and thereby leading to prevention of hypertension related morbidities.

V. Conclusion

Hypertension is a public health and policy problem because of its prevalence, costs and burdens. Though men are more commonly affected by hypertension a significant number of females are also affected. Opportunity to impart health education pertaining to lifestyle modifications was utilized in this study. By modification of lifestyle, diets, regular exercise and by use of appropriate drugs at right time majority of hypertensive cases in females specially in the young age group of below 40 years can be controlled and thus preventing some major complications.

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△= outliers

Figure 1: Comparison between the median, quartiles, maximum, minimum systolic blood pressures of the two different age groups, BMI categories and waist hip ratio categories by Box and Whisker plots.

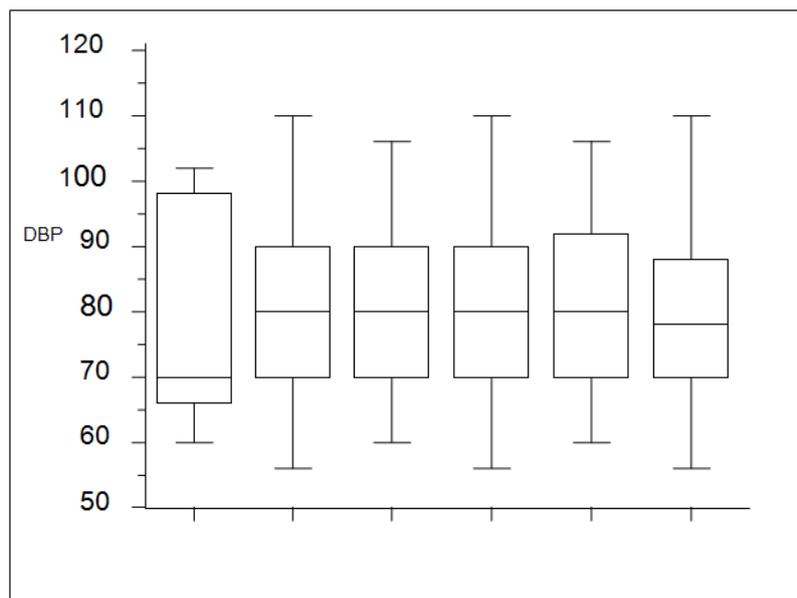


Figure 2 : Comparison between the median, quartiles, maximum, minimum diastolic pressures of the two different age groups, BMI categories and waist hip ratio categories by Box and Whisker plots.

Table-1 : Socio demographic profile of young female hypertensives(n=646)

Socio demographic characteristics	No.	percentage
Age		
20- <30	107	16.6%
30- <40	539	83.4%
Residence		
Urban	491	76%
Rural	155	24 %
Marital Status		
Ever married	506	78.3%

Never married	140	21.7%
Family income per month*		
≤` 1384	35	5.42%
`1385--`4150	106	16.4%
`4151--`6918	363	56.2%
`6919--`10,351	129	19.9%
`10,352 & above	13	2.08%
Religion		
Hindu	457	70.7%
Muslim	161	25 %
Others	28	4.3%
Parity		
Nil	97	15.1%
1-2	425	65.8%
>2	124	19.1%
Education		
Illiterate	23	3.5%
Primary	106	16.4%
Middle	161	24.9%
Secondary	195	30.2%
Higher secondary	96	14.9%
Graduate	65	10.1%
Food habits		
Non veg	545	84.4%
Veg	101	15.6%
Excess salt consumption †		
Yes	465	72%
No	181	28%
Family h/o of hypertension		
Yes	238	36.8%
No	408	63.2%
Addiction #		
Yes	58	8.97%
No	588	91.03%
H/O of OCP intake		
Yes	86	13.3%
No	560	86.7%
Type of activity		
Sedentary	508	78.6%
Moderate	114	17.6%
Hard	24	3.8%
Occupation		
Housewife	335	51.8%
Student	16	2.6%
Govt employee	67	10.4%
Pvt. Employee	68	10.5%
Self employed	119	18.4%
Unemployed	41	6.3%

*as per modified Kuppuswamy's scale(2010)

any form of tobacco/alcohol/both

†salt consumption >5 gm/daily

Table-2: Clinical profile of young female hypertensives(n=646)

Clinical characteristics	No.	percentage
Time of detection		
New cases	138	21.4%
Previously detected	508	78.6%
Stage of hypertension in case of new cases(n=138)		
Stage 1	54	39.1%
Stage 2	84	60.9%
BMI		
Underweight(<18.50)	75	11.6%
Normal(18.5-24.99)	228	35.3%
Overweight(≥25)	255	39.5%
Obese(≥30)	88	13.6%
Waist hip ratio		
<0.85	232	35.9%
>0.85	414	64.1%
Initial presenting complains*		
Headache	94	14.6%
Palpitations	32	4.9%
Syncope	02	0.3%
Chest discomfort	26	4.0%
Breathlessness	44	6.8%
Blurring of vision	06	0.9%
Pedal odema	12	1.8%
Cerebro vascular accidents	02	0.3%
Convulsions	02	0.3%
Decreased urine output	05	0.8%
Non specific/ nil symptoms	439	67.9%
Biochemical findings		
Diabetes (n= 478)	58	12.1%
Dyslipidemia (n=498)	167	33.5%
Complications suffered		
Ischemic heart disease-	32	4.95%
CVA	08	1.2%
Renal disease	24	3.7%
Eye problem	18	2.8%
Number of antihypertensives prescribed		
1	226	35.0%
2	298	46.1%
≥ 2	122	18.9%

* were mutually inclusive