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A COMPARATIVE STUDY OF CVD RISK FACTOR AMONG THE PREMENOPAUSAL BODO WOMEN AND NON BODO WOMEN WORKING IN KOKRAJHAR MEDICAL COLLEGE ASSAM

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Abstract

Background: World especially India had been witnessing a sharp increase of death and disability due to cardiovascular disease (CVD). Prevention, cure and management of cardiovascular diseases (CVD) necessitate true picture of the spread of CVD risk factors throughout the country. Among few surveys in India, very little reports were from Kokrajhar. This study aimed to report the status of CVD risk factors among Bodo tribe and non Bodo premenapausal women of Kokrajhar Medical College

Methods: Comparative study of BP ,BMI was conducted on 50 Bodo tribe and 50 Non Bodo premenaupasal women among the staff and faculties with no apparent CVD related symptom of Kokrajhar Medical College

Results: Almost 2 fold more susceptibility to develop hypertension, pre-hypertension and obesity was found in nonbodo premenopausal women over 8.0%, 15.6% and 22.1% of respective affected Bodo women . This trend increased up to 3 fold in > 40 years age group. This >40 when compared with < 40 years age group nearly 16 fold and 11 fold significantly increased hypertension risk was reported in nonbodo and Bodo premenapausal women respectively

Conclusion: With age above 40 years, susceptibility to different CVD risk factors like hypertension, pre-hypertension, obesity, reported to increase severely in urban nonBodo women than Bodo premenapausal women.

Keywords: BMI;Hypertension; NonBodo; Bodo;Pre Menopause

INTRODUCTION

Cardiovascular disease, and particularly coronary heart disease (CHD), has a low incidence in premenopausal women. Loss of ovarian hormones during the perimenopause and menopause leads to a sharp increase in incidence. Although most CHD risk factors are common to both men and women, the menopause is a unique additional risk factor for women. Sex steroids have profound effects on many

CHD risk factors. Their loss leads to adverse changes in lipids and lipoproteins, with increases being seen in low density lipoprotein (LDL) cholesterol and triglycerides, and decreases in high density lipoprotein (HDL) cholesterol. There is a reduction in insulin secretion and elimination, but increases in insulin resistance eventually result in increasing circulating insulin levels. There are changes in body fat distribution with accumulation in central and visceral fat which links to the other adverse metabolic changes. There is an increase in the incidence of hypertension and of type 2 diabetes mellitus, both major risk factors for CHD. CVDs constitute the leading cause among NCDs in India [8]. Country such as India with enormous diversity, has huge variation in prevalence and risk factors of NCDs. Studies conducted in urban and rural settings regarding CVD risk factors have shown significant differences [5]. Within Indian context, tribal population, restricted to rural areas, are associated with poverty, illiteracy, malnutrition [9]. Thus, they are assumed to be untouched by NCDs which are lifestyle driven diseases. However, recent studies have produced evidence for increasing trend of NCDs among tribal population groups [9, 10]. ICMR conducted a survey among 7 states of India based on WHO's STEPS method to investigate NCD risk in 2007-2008 [11]. Though these states are inhabited by tribal population, prevalence of NCDs were reported among urban, rural and combined population. Studies have been conducted on tribal population groups of different states including Mahrashtra,

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Gujarat, Andaman and Nicobar islands, Kerela and Karnataka on various risk factors associated with NCDs [12–17]. However, owing to their diverse ethnic background, culture, diet, habitat and behavioural habits, tribes are expected to have community specific risk factors. Very few studies [18–20] are available on tribes of hilly terrain of Himalayan belt. Since NCDs have become a public health challenge, surveillance of risk factors associated with CVDs, a leading cause among NCDs, in tribal communities is essential for developing prevention strategies and implementing control programmes. The strength of the association between CVD risk factors and menopause differ cross-culturally since several modi¦able factors play signi¦cant roles in explaining CVD mortality than differences in endogenous estrogen. For example, the prevalence of CVD risk factors related to menopause varies across socioeconomic groups, early life events, family history, household stress, woman's attitudes and behaviors towards menopause and differential age at attaining menopause and rural-urban residence [13–16]. In India, the occurrence of premature menopause (before age 40) is most common among the rural agricultural workers, those who are non-literates, and have a low body mass index, signaling higher risks of CVD [17, 18]. Very few of the studies from this subcontinent have been concerned with the menopause speci¦c CVD risk factors, particularly among the tribal groups [19–21]. Though some studies have been concerned with CVD risk factors among the primitive tribal groups, but they did not taken into consideration the issue of menopause [22, 23]. Most of these studies focused mainly on the age of onset of menopause, attitude and perception towards menopause, severity of menopausal symptoms and its variations across socio-economic groups [24–27].

Many of the ethnic minority groups of this country are socio-economically disadvantaged which exposed them to higher risks of inadequate food intake, poor hygiene and tobacco and alcohol consumption as studies reveal that the burden of CVD is now shifting from richer and better educated section to the poor and less educated section [34, 35]. In addition, the range of mean age at menopause of Indian women varied widely (41.9 and 49.4 years) leaving women of different cultural groups at increased risk of CVD [17, 30, 31]. Thus, an improved understanding of the concomitants associated with body fat pattern and increasing CVD risk factors during menopause among caste and tribal populations has become imperative. We hypothesized in this study that there will be a variation in body fat pattern and CVD risk factors between Bengali Hindu caste and Lodha tribal postmenopausal populations, within the state of West Bengal, India – a microcosm of ethnic, economic, rural/urban and health disparity. The intellectual merit of the present study is a perspective that incorporates multiple axes: menopause, ethnicity and

AIMS AND OBJECTIVES

To do a comparative study of CVD risk factor of Blood pressure and BMI of 50 pre menopausal women of Bodo and 50 Non Bodo women in the age group 41to 48years among the staff working in Kokrajhar Medical CollegeComparative study was conducted on Bodo and urban non Bodo premenopausal women

with no apparent CVD related symptoms. Informed consents, filled up CVD risk questionnaire were collected. Anthropometric and behavioral data with measured Blood pressure (BP), bloodand body mass index (BMI) were taken

MATERIALS AND METHOD

INCLUSION CRITERIA-Premenopausal BodoWomen among the staff of Kokrajhar Medical Collegein the age group 41-48yrs who experienced physiological changes occuring disrupting their regular Menstural cycle were considered to Women were considered to be premenopausal if they still menstruated in the past 12 months (Tonkelaar et al., 1989)

EXCLUSION CRITERIA –Pre menopausal women who had history of hypertension and blood sugar.women who were on hormone therapy,contraceptives or on anti hypertensive medication

Cardiovascular parameters:

Radial pulse: right hand radial pulse was measured for one minute and checked for rate, rhythm, volume and condition of vessel wall.

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Blood pressure: was recorded using a standard sphygmomanometer with subject in sitting posture, cuff applied to right upper arm. Subjects were labeled as follows:

TABLE 1;WHO CLASSIFICATION

SBP[mmHg]	DBP[mmHg]	
<120	<80	Normal
120-139	80-89	Pre-Hypertension
140-159	90-99	Stage1Hypertension
>/=160	>/=100	Stage11Hypertension

ANTHROPOMETRIC PARAMETERS-

HEIGHT was measured using a anthropometer

WEIGHT was measured by a weighing machine

BMI was calculated as weight in Kg/m2

BlOOD PRESSURE was recorded by using a sphygmomanometer

STATISTICAL ANALYSIS

Student t test was used to find the significance of difference in anthropometry and cardiovascular parameters and between the two groups.

RESULT :

TABLE 2 SHOWING COMPARISION OF ANTROPOMETERIC PARAMETER OF BODO WOMEN AND NON BODO WOMEN

ANTHROPOMETERIC PARAMETER	BODO WOMEN	NON BODO WOMEN	Pvalue
Age	35	44.33	>.05
Height	1.53	1.50	>.05
BMI	26.87	30.69	<.05
Weight	57.05	63..78	>.05

TABLE 3 COMPARISION OF CARDIOVASCULAR PARAMETER OF BODO AND NONBODO WOMEN

PRESENTING FACTOR	BODO WOMEN	NON BODO WOMEN	PVALUE
HYPERTENSION	3[10%]	14[46%]	<.05
DIABETES MELLITUS	2[6%]	11[36%]	<.05
FAMILY HISTORY OF DIABETES ,HYPERTENSION	7[25%]	16[53%]	<.01

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TABLE 4 COMPARISION OF BLOOD PRESSURE OF BODO AND NON BODO WOMEN

CARDIOVASCULAR PARAMETERS	BODO WOMEN	NON BODO WOMEN	Pvalue
Systolic BP	121.70±12.17	142.34±11.02	**<.05**
Diastolic BP	80.43±9.17	84.43±9.17	**>.05**

DISCUSSION

In the present study, estimation of measurement of Body Mass Index and Blood Pressure was carries out in pre-menopausal Bodo and non Bodo women. The major finding of the study was that BMI was much higher in Non Bodo women Magdalena Skrzypczak (20012)[36], states in their study even a slight increase in visceral obesity within normal body mass limits may contribute to unfavourable changes of the women's metabolic profile, which in turn, may represent a risk of sickness to occur.[37]

Almost 2 fold more susceptibility to develop hypertension, pre-hypertension and obesity was found in nonbodo premenopausal women

The present study showed that body weight, BMI, blood pressure, were all higher in premenopausal non bodo women compared to pre-menopausal Bodo women. Greater proportions of postmenopausal women were hypertensive. Obesity and Hypertension are two important targets for reduction of cardiovascular risk resulting from menopausal transition. Since there is greater propensity Our study shows physical activity has an inverse association with the blood sugar level; this could be areason behind the lower incidence of diabetes among the tribal participants. A recent study conductedamong Chinese women reveals that a higher degree of physical activity was associated with lower bloodglucose level regardless of sex, menopausal status and family history of diabetes[38] .

CONCLUSION –A greater focus on addressing adverse levels of all CVD risk factors among women of underrepresented races and ethnicities is warranted to avert future CVD morbidity and death. Adverse social factors such as health care access, ethinicity,food habits are common in communities of underrepresented races and ethnicities and pose a significant challenge in the diagnosis of CVD and the application of treatment modalities. Culturally sensitive, peer-led community and health care professional education is a necessary step in CVD prevention. Equitable access to guideline-approved, evidence-based cardiovascular preventive health care based on available data should be available for all women regardless of race and ethnicity. Despite this knowledge, these guidelines are not equally incorporated into practice, which highlights a call to action.

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