

AN INCREASE OF MOBILITY & MORTALITY RATE DO TO POSTMENOPAUSAL HYPERTENSION IN DUTSE GENERAL HOSPITAL

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ABSTRACT

Cardiovascular disease is the prominent cause of morbidity and mortality in postmenopausal women. Hypertension is a key risk factor for cardiovascular disease. The mechanisms that are liable for postmenopausal hypertension have not been fully revealed. However, various mechanisms have been concerned to play a role. For example, there is an evidence that deviate in estrogen/androgen ratios favoring increases in androgens, activation of the renin–angiotensin and endothelin systems, activation of the sympathetic nervous system, metabolic syndrome and obesity, inflammation, increased vasoconstrictor eicosanoids, and anxiety and depression may be important in the pathogenesis of postmenopausal hypertension.

Key word: The mortality rate of women is increase do to hypertension at menopause stage

I. INTRODUCTION

There is an evidence that hypertension is less well controlled in aging women than in aging men, but the reasons for this gender difference is not clear. Postmenopausal hypertension is likely multifactorial. Future studies will be necessary to determine the contribution of these systems listed above in mediating postmenopausal hypertension and to design treatment strategies that encompass these mechanisms to improve the quality of life of postmenopausal women as they age.¹

Cardiovascular disease is the leading cause of morbidity and mortality in men and women,² but the incidence of cardiovascular disease–related deaths is higher in women than men.^{1,4} Hypertension is one of the leading risk factors for cardiovascular disease.^{1,4} Aging in both men and women is characterized by increases in blood pressure (BP),² but the age-related increases are more rapid in women than in men,^{3,5} and the prevalence of hypertension in postmenopausal women is higher than in men.^{2,6} In the world, in general, 25% of adult women are hypertensive, and in the United States, >75% of women over 60 years of age are hypertensive.⁵ In studies using the National Health and Nutrition Examination Survey 1999–2004 data set, the percentage of individuals with uncontrolled BP was $50.8 \pm 2.1\%$ in men and $55.9 \pm 1.5\%$ in women, while women are more likely to have their BPs measured within the previous 6 months than men. Despite this, comparison of the National Health and Nutrition Examination Survey III cohort with the National Health and Nutrition Examination Survey IV cohort

showed that women are more likely to have poorly controlled hypertension than men, while the drugs to treat hypertension were similar between men and women.

Non-dipping of BP at night is associated with enlarged target organ impairment. However, there is an evidence that non-dipping in women in general is associated with greater target organ loss than in men, and postmenopausal women are more likely than premenopausal women to display nightly non-dipping of BP. Noted that antihypertensive methods are similar in both men and women and women are more likely to have their BPs measured, hypertension may be less well controlled in women. This suggests that perhaps the mechanisms responsible for hypertension in women may differ from the mechanisms in men.

The incidence of obesity may be as high as 40% in postmenopausal women,⁷ and increases in body weight have been shown to be associated with increases in BP.⁸ Obesity is one component of the cluster of features known as the metabolic syndrome that also includes insulin resistance, type 2 diabetes, hyperlipidemia, and hyperleptinemia, that could also impact BP.⁸ Rossi and colleagues reported that improvement in endothelial dysfunction and inflammation seen in response to antihypertensive medications was attenuated in postmenopausal women, aged 47–60 years, who exhibited symptoms of the metabolic syndrome.⁹ Thus, the presence of metabolic syndrome may not only contribute to the hypertension but also affect response to treatment therapies in postmenopausal women.

Increased body weight, plasma leptin levels, and aging have been shown to cause sympathetic activation.^{8,10,11} However, whether sympathetic activity is increased in postmenopausal women is not clear. Czarnecka and colleagues reported that the levels of norepinephrine and leptin were higher in postmenopausal women than age-matched premenopausal women.¹⁵ However, Hogarth and colleagues found that both muscle sympathetic nerve activity and multiunit bursts (b-muscle sympathetic nerve activity) were higher in age-matched normotensive and hypertensive men than normotensive and hypertensive women, respectively.¹⁶

In this review, we will discuss the evidence that each of these factors may contribute to postmenopausal hypertension and will develop a unifying hypothesis that incorporates all of them. There is also a brief mention of the potential role that depression and psychological well-being may play in contributing to postmenopausal hypertension.

II. THE MAJOR INFLUENCES RESPONSIBLE FOR POSTMENOPAUSAL HYPERTENSION

1. Effect of obesity

Obesity is rapidly becoming an epidemic in all of the developed countries in the world. In the United States, the incidence of obesity is increasing in individuals in all states with the highest incidence existing in the southeast.^{21,22} There are also ethnic differences in the incidence of obesity in the United States. For example, 23.3% of non-Hispanic white women were found to be obese whereas 41.9% of non-Hispanic women were found to be obese.²¹ Obesity has been shown to increase after surgical menopause and to be increased in women who started HRT within 12 months of amenorrhea.²³



2. Effect of hormones

Whether the presence of estradiol protects against increases in BP in premenopausal women, and conversely, whether the lack of estradiol contributes to hypertension in postmenopausal women is controversial and unknown. For example, Olszanecka and colleagues measured ambulatory BP in normotensive and hypertensive women, aged 40–60 years, and found that BP was similar in normotensive and hypertensive groups regardless of presence or absence of menopause.¹² Unfortunately, there have been no studies to our knowledge in which ambulatory BP has been measured serially over the premenopausal transition.

3. Effect of Eicosanoids in postmenopausal hypertension

Arachidonic acid is converted to epoxyeicosatrienoic acids by epoxygenases or to 20-HETE by omega-hydroxylases.¹⁴ Ward and colleagues found that urinary excretion of 20-HETE, a vasoconstrictor, is higher in hypertensive women with endothelial dysfunction than in age-matched men.¹³ Androgens are known to increase the synthesis of 20-HETE via their effect on the synthesis of some of the subtypes of the omega-hydroxylases, that leads to hypertension.^{18,19} Wu and colleagues have also recently shown that androgen-mediated increases in 20-HETE activate NF- κ B and increase BP which is prevented by blockade of both 20-HETE synthesis and I κ B kinase inhibitors.²⁰ We have preliminary data in our rat model of postmenopausal hypertension that suggest that 20-HETE may contribute to their hypertension. Epoxyeicosatrienoic acids are vasodilators that may be decreased following menopause, and thus contribute to postmenopausal hypertension. Further studies are necessary to follow-up on these observations and hypotheses.

III. OBJECTIVES

The main objectives of this research, is to prevent the women from CHF do to chronic heart and blood vessels damage cause by sustained blood pressure.

IV. METHODOLOGY

A survey was made in Dutse General Hospital, an interview was made with doctors and some patients with hypertension case and their record was studied. The research also study the record of patients with hypertension from 2010-2017 making seven (7) years

V. RESULT AND DISCUSSION

After going through all the above data, four hundred and eighty one (481) patients have been diagnosed with the new case of hypertension in Dutse General Hospital out of which ninety five (95) patients have been reported as the rate of mortality within that seven years period. The research shows that the rate of mortality of postmenopausal hypertension cases are almost increased in every year except that of 2015 and the detail below shows:

Table: 1

S/no	Year	Rate of new cases	Rate of mortality
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1	2011	62	8
2	2012	66	11
3	2013	66	13
4	2014	69	15
5	2015	70	13
6	2016	73	17
7	2017	75	18
Total		481	95

In the year 2011, 62 postmenopausal patient are been diagnosed with the case of hypertension while out of 62, 8 patient are reportedly death. Similarly, in the year 2012, 66 postmenopausal patient are diagnosed with the case of hypertension and 11 patient are reportedly death.

In 2013, 66 are been finded with new case of hypertension in postmenopausal women and about 13 patient are reportedly death.

In 2014, 69 postmenopausal patient are been diagnosed with hypertension and about 15 number of patient re been reportedly death.

In the year 2015, the report shows that 70 postmenopausal patient are diagnosed with the case hypertensive and about 13 patient are reportedly death.

In 2016, 73 postmenopausal patient are been diagnosed with the case of hypertension while out of 73, 17 patient are reportedly death.

Similarly, in the year 2017, the same can be said that 75 postmenopausal patient are been diagnosed with the case of hypertension while out of 75, 18 patient are reportedly death.

Table: 2

S/no	Year	Rate of new cases	% Rate of new cases	Rate of mortality	% Rate of mortality
1	2011	62	12.88%	8	8.42%
2	2012	66	13.72%	11	11.57%
3	2013	66	13.72%	13	13.68%
4	2014	69	14.34%	15	15.78%
5	2015	70	14.55%	13	13.68%
6	2016	73	15.17%	17	17.89%
7	2017	75	15.59%	18	18.94%
Total		481	100%	95	100%

In 2011, the percentage average of postmenopausal patient that are diagnosed with new case of hypertension is 12.88% and about 8.42% are been reported as rate of mortality.

In 2012, 13.72% of postmenopausal patient are diagnosed with new case of hypertension and about 11.57% are been reported as rate of mortality.

In 2013, about 13.72% of postmenopausal women are diagnosed with the case of hypertension and about 13.68% are been reported as rate of mortality.

In 2014, 14.34% of postmenopausal patient are diagnosed with new case of hypertension and about 15.78% are been reported as rate of mortality.

Similarly, in the year 2015, 14.55% of menopause women are been finded with the new case of hypertensive and 13.68% are been reportedly death and it was the only year that the percentage rate of mortality is slightly decrease.

In the year 2016, about 15.59% of menopausal women are bee reported as new diagnosed patient with hypertension and 17.89% are been reported as rate of mortality.

In 2017, the report shows that about 15.59% of menopausal women patient are diagnosed with hypertensive cases similarly, 18.94% are been reported as the rate of mortality.

In general, this report indicate that the rate of mortality are almost been elevated in every year except in 2015.

VI. CONCLUSION

Most clinical studies to recognize the mechanisms that could be responsible for postmenopausal hypertension in women have yielded correlative data, rather than differentiated data because of the limitation against martial systems, expense and difficulty of obtaining longitudinal data. Postmenopausal hypertension can be extremely manage by modifying the lifestyle. Life style plays an important role in the treatment of BP for example,

Lose of extra pounds and watch your waistline

Proper exercise

Eating a healthy food

Reduce sodium intake

Limit the amount of alcohol intake

Cut back on caffeine

Reduce self stress (think about problem under your control and make aplan to solve it; prepare a time to relax)

Regular monitoring of blood pressure.

The maintenance of the above point may lead to manage the postmenopausal hypertension even without taken medication.

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