

Vasomotor symptoms and blood pressure in menopausal women

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CONTEXT: Hot flashes are one of the first clinical symptoms of the menopause. Mechanism of hot flashes is still not fully understood. Changes in concentrations of circulating follicle stimulating hormone, luteinizing hormone, estrogen and other hormones can lead to thermoregulatory dysfunction. Hypertension occurrences in menopause due to hypoestrogenism and changes in relation of estrogen and androgens, which is the most important risk factor for development of cardiovascular diseases.

OBJECTIVE: The aim of this study was to determine connection between hot flashes and blood pressure values in menopausal women.

METHODS: The study involved menopausal women divided into two groups: 24 menopausal women with hot flushes, average age 51.83 ± 4.48 years and mean time since menopause $2,12 \pm 2,29$ and 12 menopausal women without hot flushes in the control group average age 57.17 ± 2.66 years and mean time since menopause $3,58 \pm 2,49$ years. Data on the presence of hot flashes were based on history data. Ambulatory blood pressure monitoring during 24 hours was performed on Schiller apparatus, with measurements performed at half an hour during the day and during the night. Women with hot flushes had additional measurements of blood pressure during the hot flushes. The mean value of systolic and diastolic blood pressure during hot flushes during the day and night was calculated.

RESULTS: There was no statistically significant difference between mean values of systolic blood pressure during hot flushes between women with hot flushes and control group during the day ($128,10 \pm 11,42$ vs. $127,19 \pm 13,70$ mmHg, $p > 0.05$) and during night ($120,50 \pm 13,93$ vs. $116,64 \pm 12,72$ mmHg, $p > 0.05$). There was no statistically significant difference between mean values diastolic blood pressure during hot flushes between women with hot flushes and control group during the day ($83,78 \pm 12,78$ vs. $77,83 \pm 9,43$ mmHg, $p > 0.05$) and during night ($83,40 \pm 9,77$ vs. $81,72 \pm 11,55$ mmHg, $p > 0.05$).

CONCLUSIONS: Although we have not found statistically significant difference between mean values of systolic and diastolic blood pressure during hot flushes during the day and the night between women with hot flushes and women without hot flushes, we consider that more detailed blood pressure measurements should be performed, immediately before and after hot flushes, that would point to dynamic changes on blood vessels caused by hypoestrogenism.

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