

Premenstrual Symptoms Predict Postmenopausal Hot Flashes- A Retrospective Observational Study

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Abstract:

Introduction: Premenstrual symptoms are common and can markedly impair the quality of life of women in their reproductive age. Although premenstrual symptoms naturally cease at the menopause, women's health-related quality of life can significantly diminish due to further complaints such as vasomotor symptoms; majority of women (80%) report hot flashes postmenopausally. Interestingly, premenstrual and postmenopausal symptoms share similar features, such as mood changes, raising the question whether they also share similar background mechanisms.

Materials and Methods: 140 recently postmenopausal healthy women with prospectively rated hot flashes [72 with (≥ 7 moderate/severe flushes/day) and 68 without (≤ 3 mild/none hot flushes/day) hot flushes] were included in to this study. In these women we compared the prevalence and severity of premenstrual symptoms assessed retrospectively with Premenstrual Symptoms Screening Tool (PSST) and calculated a PSST score reflecting the severity of symptoms ($n=100$).

Results: -87/100 women reported premenstrual symptoms. Started at mean age of 25.5 ± 1.0 , stopped at 46.3 ± 0.7 and mean duration 21.3 ± 1.1 years

-Mean PSST score among all women 7.9 ± 0.7 , ranging from 0 to 38

-PSST score was 9.2 ± 1.0 in women with hot flushes vs. 6.5 ± 0.8 in women without hot flushes ($p=0.036$)

Features of premenstrual symptoms: -Physical symptoms (breast tenderness, headache, bloating or weight gain) ($n=80/100$)

-Moderate or severe physical symptoms ($n=32/100$)

-Interference with work efficiency, relationships at work or at home, home responsibilities or social life activities ($n=44/100$) Seven women met the criteria of PMS and two had PMDD according to PSST criteria

Conclusion: History of premenstrual symptoms was common in this population and interfered considerably with work and social life. Women with troublesome postmenopausal hot flushes were more likely to have had premenstrual symptoms in their fertile years than women without postmenopausal hot flushes.

I. INTRODUCTION

Premenstrual symptoms are common and can markedly impair the quality of life of women in their reproductive age. Although premenstrual symptoms naturally cease at the menopause, women's health-related quality of life can significantly diminish due to further complaints such as vasomotor symptoms; majority of women (80%) report hot flashes postmenopausally. Interestingly, premenstrual and postmenopausal symptoms share similar features, such as mood changes, raising the question whether they also share

similar background mechanisms. However, the relationship between premenstrual and postmenopausal symptoms is incompletely understood. To investigate the association between premenstrual symptoms and postmenopausal hot flushes, we retrospectively evaluated the prevalence and severity of premenstrual symptoms in a population of postmenopausal women with carefully rated hot flushes.

Hot flushes are among the most frequent complaints of women during the menopausal transition, affecting up to 80% of women within the first year of cessation of menses. These common symptoms have been shown to negatively affect

quality of life by disturbing sleep, interfering with work and leisure activities, and exacerbating anxiety and depression. With several randomized controlled trials pointing to the negative long-term effects of systemic estrogen therapy in postmenopausal women, there is growing interest in identifying modifiable risk factors for hot flushes and developing alternate therapies for these symptoms.

In most women, hot flushes resolve within a few years of menopause, but some women report symptoms for many years after they cease to menstruate. Very little attention has been given to the substantial minority of women who continue to have hot flushes 5 or more years after menopause, even though it is these women who appear to be at greatest risk of suffering adverse effects from using estrogen to treat their symptoms. At this time, the prevalence of hot flushes in older postmenopausal women has not been well documented, predictors of symptoms in older postmenopausal women have not been examined, and it is not clear why hot flushes resolve in some women, but continue for many years in others.

II. MATERIALS AND METHODS

140 recently postmenopausal healthy women with prospectively rated hot flushes [72 with (≥ 7 moderate/severe flushes/day) and 68 without (≤ 3 mild/none hot flushes/day) hot flushes] were included in to this study.

Study period – August 2016 to January 2017

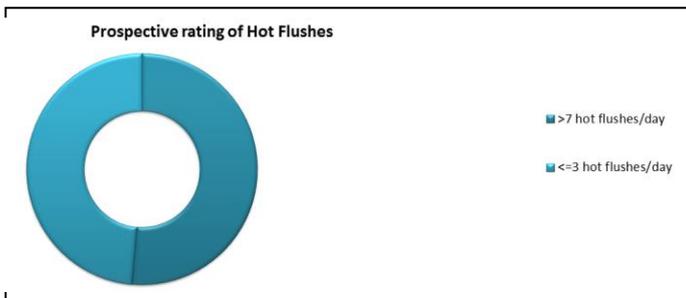


Figure 1

INCLUSION CRITERIA

Inclusion criteria

Age 45-55 years

onset of menopause within 6-36 months, FSH > 30 IU/L

Blood pressure < 140/90 mmHg

Non-smoking

No regular medication

Intact uterus

BMI ≤ 30 kg/m²

-In these women we compared the prevalence and severity of premenstrual symptoms assessed retrospectively with Premenstrual Symptoms Screening Tool (PSST) and calculated a PSST score reflecting the severity of symptoms (n=100). PSST presents diagnostic criteria for Premenstrual Syndrome (PMS) and Premenstrual Dysphoric Disorder (PMDD).

Hot flushes were recorded prospectively for two weeks in a validated and structured diary.

HOT FLUSH RATING

Score	Severity of Hot Flushes
0	absent if there were no sensations of heat at all
1	mild if there was only a slight sensation of heat without sweating
2	moderate if there was an intense sensation of heat while awake
3	severe if hot flushes clearly interfered with daily life or sleep

Hot Flush Weekly Weighted Symptom score (HFWS) was calculated as the sum of all weighted hot flush symptoms during one week.

III. RESULTS

-87/100 women reported premenstrual symptoms.

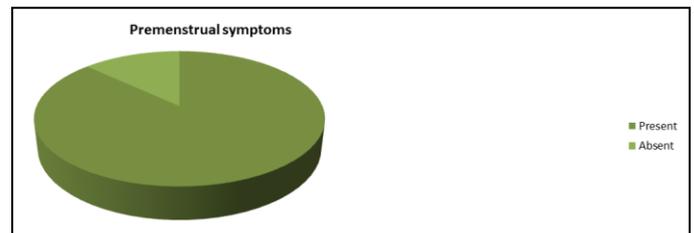


Figure 2

-Started at mean age of 25.5 ± 1.0 , stopped at 46.3 ± 0.7 and mean duration 21.3 ± 1.1 years

-Mean PSST score among all women 7.9 ± 0.7 , ranging from 0 to 38

-PSST score was 9.2 ± 1.0 in women with hot flushes vs. 6.5 ± 0.8 in women without hot flushes ($p=0.036$)

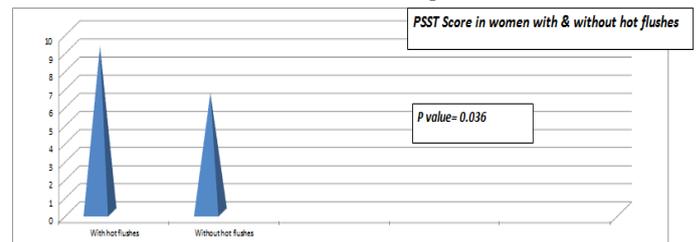


Figure 3

FEATURES OF PREMENSTRUAL SYMPTOMS:

-Physical symptoms (breast tenderness, headache, bloating or weight gain) (n=80/100)

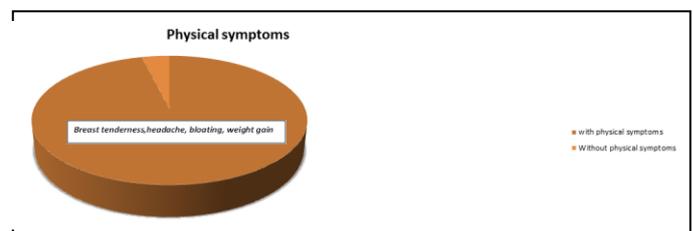


Figure 4

-Moderate or severe physical symptoms (n=32/100)

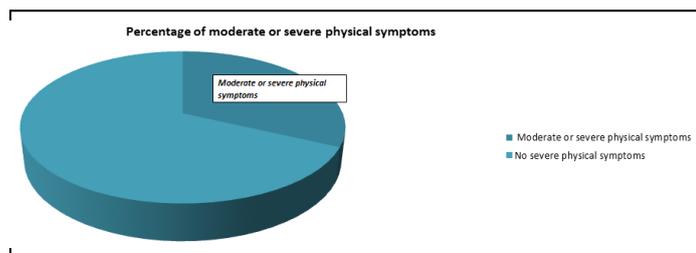


Figure 5

-Interference with work efficiency, relationships at work or at home, home responsibilities or social life activities (n=44/100)

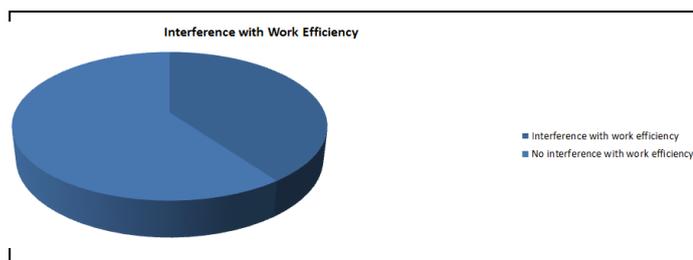


Figure 5

Seven women met the criteria of PMS and two had PMDD according to PSST criteria. All of these women had postmenopausal hot flushes of different degrees of severity.

A history of premenstrual symptoms was more common in women with hot flushes, however, the severity of premenstrual symptoms and postmenopausal hot flushes lacked significant correlation.

IV. DISCUSSION

These analyses of data from a large clinical trial demonstrate that for a substantial minority of women, hot flushes are a significant source of discomfort and distress well into the late postmenopausal years. Among women who were 5 to 9 years postmenopausal, more than 20% reported clinically significant hot flushes, and among those 10 or more years postmenopausal, nearly 10% reported clinically significant hot flushes. Furthermore, more than half of women who complained of significant hot flushes at baseline continued to report persistently bothersome symptoms after 3 years.

Although most research on hot flushes has focused on younger perimenopausal or early postmenopausal women, a few previous studies involving older postmenopausal women have also pointed to a significant prevalence of hot flushes in this population. An analysis of 2763 postmenopausal women aged 55 to 88 years with preexisting coronary artery disease found that 3% had "very frequent" and 13% had "somewhat frequent" hot flushes. Among women aged 50 to 79 enrolled in the Women's Health Initiative estrogen plus progestin trial, slightly more than 12% reported "moderate or severe" vasomotor symptoms at baseline. In a survey of women living in Gothenberg, Sweden, 15% of women aged 66 years and 9% of women aged 72 years reported "any" hot flushes, although

no assessment of frequency or severity of hot flushes was performed.

Greater severity of hot flushes was inversely associated with years of education in our study, a finding that has also been noted in studies of perimenopausal and early postmenopausal women. One theory that has been proposed to explain this association is that highly educated women may be more likely to follow healthier lifestyle habits such as regular physical exercise that may ameliorate the severity of menopausal symptoms; however, other studies have reported that physical exercise may be detrimental to hot flushes. Regardless, aerobic activity, alcohol use, and tobacco use were not independently associated with symptoms in our population. Recently, several laboratory-based studies have suggested that hot flushes may be potentiated by increased neurosympathetic activation, and it is possible that differences in neurohormonal stress response, which may be increased in individuals of lower socioeconomic status, may mediate a relationship between hot flushes and lower educational status.

The characteristic most strongly associated with hot flushes in our study was trouble sleeping, even though the latter did not tend to improve with increasing time since menopause. Multiple previous studies have found an association between hot flushes and subjective sleeping disturbances, leading some researchers to conclude that hot flushes disrupt sleep; however, several laboratory-based studies using objective measures have documented that hot flushes and night sweats tend to follow, rather than precede, arousals and awakenings from sleep. Rather than being a cause of sleep disturbances, therefore, hot flushes may be a comorbid symptom of menopause that shares common underlying triggers.

V. CONCLUSION

History of premenstrual symptoms was common in this population and interfered considerably with work and social life. Women with troublesome postmenopausal hot flushes were more likely to have had premenstrual symptoms in their fertile years than women without postmenopausal hot flushes.

REFERENCES

- [1] Stearns VUllmer LLopez JFSmith YIsaacs CHayes D Hot flushes. *Lancet* 2002;360 (9348) 1851- 1861
- [2] Bastian LASmith CMNanda K Is this woman perimenopausal? *JAMA* 2003;289 (7) 895- 902
- [3] Freeman EWSammel MDLiu LGracia CRNelson DBHollander L Hormones and menopausal status as predictors of depression in women in transition to menopause. *Arch Gen Psychiatry* 2004;61 (1) 62- 70
- [4] Freeman E W Sammel M D Lin H Gracia CRKapoor SFerdousi T The role of anxiety and hormonal changes in menopausal hot flashes. *Menopause* 2005;12 (3) 258- 266
- [5] Whiteman M K Staropoli C A Langenberg P W McCarter R J Kjerulff KHFlaws JA Smoking, body mass,

- and hot flashes in midlife women. *Obstet Gynecol* 2003;101 (2) 264- 272
- [6] Rossouw JEP, Prentice RL, Manson JE et al. Postmenopausal hormone therapy and risk of cardiovascular disease by age and years since menopause. *JAMA* 2007;297 (13) 1465- 1477
- [7] Hulley S, Grady D, Bush T et al. Heart and Estrogen/progestin Replacement Study Research Group, Randomized trial of estrogen plus progestin for secondary prevention of coronary heart disease in postmenopausal women. *JAMA* 1998;280 (7) 605- 613
- [8] Ettinger B, Black DM, Mitlak BH et al. Multiple Outcomes of Raloxifene Evaluation Investigators, Reduction of vertebral fracture risk in postmenopausal women with osteoporosis treated with raloxifene: results from a 3-year randomized clinical trial. *JAMA* 1999;282 (7) 637- 645
- [9] National Institutes of Health State-of-the-Science Panel, National Institutes of Health State-of-the-Science Conference statement: management of menopause-related symptoms. *Ann Intern Med* 2005;142 (12, pt 1) 1003-1013
- [10] Sheikh JI, Yesavage JA Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. Brink TL *Clinical Gerontology A Guide to Assessment and Intervention*. New York, NY Haworth Press 1986;165- 173
- [11] Modelska K, Litwack S, Ewing SK, Yaffe K Endogenous estrogen levels affect sexual function in elderly postmenopausal women. *Maturitas* 2004;49 (2) 124- 133
- [12] Davies GCH, Huster WJ, Lu Y, Plouffe L Jr, Lakshmanan M Adverse events reported by postmenopausal women in controlled trials with raloxifene. *Obstet Gynecol* 1999;93 (4) 558- 565
- [13] Barnabei VM, Grady D, Stovall DW et al. Menopausal symptoms in older women and the effects of treatment with hormone therapy. *Obstet Gynecol* 2002;100 (6) 1209- 1218
- [14] Rödström K, Bengtsson CL, Lissner LM, Söndh VB, Jörkelund C A longitudinal study of the treatment of hot flashes: the population study of women in Gothenburg during a quarter of a century. *Menopause* 2002;9 (3) 156- 161
- [15] Li CS, Samsioe GB, Borgfeldt CL, Lidfeldt JA, Gardh CD, Nerbrand C Menopause-related symptoms: what are the background factors? a prospective population-based cohort study of Swedish women (The Women's Health in Lund Area study). *Am J Obstet Gynecol* 2003;189 (6) 1646- 1653
- [16] Dennerstein LD, Dudley ECH, Hopper JL, Guthrie JRB, Burger HG A prospective population-based study of menopausal symptoms. *Obstet Gynecol* 2000;96 (3) 351- 358
- [17] Aiello EJ, Yasui Y, Tworoger SS et al. Effect of a yearlong, moderate-intensity exercise intervention on the occurrence and severity of menopause symptoms in postmenopausal women. *Menopause* 2004;11 (4) 382- 388
- [18] Freedman RR, Krell W Reduced thermoregulatory null zone in postmenopausal women with hot flashes. *Am J Obstet Gynecol* 1999;181 (1) 66- 70
- [19] Swartzman LC, Edelberg RK, Kemmann E Impact of stress on objectively recorded menopausal hot flashes and on flush report bias. *Health Psychol* 1990;9 (5) 529- 545
- [20] Cohen S, Doyle WJ, Baum A Socioeconomic status is associated with stress hormones. *Psychosom Med* 2006;68 (3) 414- 420
- [21] Oldenhave AJ, Jaszmann L, Jeveraerd W, Thaspels AA Hysterectomized women with ovarian conservation report more severe climacteric complaints than do normal climacteric women of similar age. *Am J Obstet Gynecol* 1993;168 (3, pt 1) 765- 771
- [22] Kaiser RK, Kusche MW, Wurz H Hormone levels in women after hysterectomy. *Arch Gynecol Obstet* 1989;244 (3) 169- 173
- [23] Siddle NS, Sarrel P, Whitehead M The effect of hysterectomy on the age at ovarian failure: identification of a subgroup of women with premature loss of ovarian function and literature review. *Fertil Steril* 1987;47 (1) 94- 100
- [24] Cauley JA, Gutai JPK, Kuller LH, LeDonne DP, Powell JG The epidemiology of serum sex hormones in postmenopausal women. *Am J Epidemiol* 1989;129 (6) 1120- 1131
- [25] Greendale GA, Gold EB Lifestyle factors: are they related to vasomotor symptoms and do they modify the effectiveness or side effects of hormone therapy? *Am J Med* 2005;118 ((suppl 12B)) 148- 154
- [26] Randolph JF Jr, Sowers MB, Bondarenko I et al. The relationship of longitudinal change in reproductive hormones and vasomotor symptoms during the menopausal transition. *J Clin Endocrinol Metab* 2005;90 (11) 6106- 6112
- [27] Leal MD, Diaz JS, Serrano EA, Bellan J, Carbonell LF Hormone replacement therapy for oxidative stress in postmenopausal women with hot flashes. *Obstet Gynecol* 2000;95 (6, pt 1) 804- 809
- [28] Binder EF, Williams DB, Schechtman KB, Jeffe DB, Kohrt WM Effects of hormone replacement therapy on serum lipids in elderly women: a randomized, placebo-controlled trial. *Ann Intern Med* 2001;134 (9, pt 1) 754- 760
- [29] Mudali S, Dobs AS, Ding J, Cauley JA, Szklo M, Golden SH Endogenous postmenopausal hormones and serum lipids: the Atherosclerosis Risk in Communities Study. *J Clin Endocrinol Metab* 2005;90 (2) 1202- 1209