

Differences in the What's My M3? test between pre- and postmenopausal women

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Abstract

Aim of the study: To evaluate the differences in the What's My M3 test between pre and postmenopausal women.

Material and methods: Pre- and postmenopausal women who attended an endocrine gynaecology consultation were studied. In all them, the What's My M3? test was applied. Descriptive statistics, central tendency and dispersion measures were used. Differences between groups were assessed with Mann Whitney *U* test, and Spearman correlation analysis was carried out for age and time since menopause with the What's My M3? score.

Results: A total of 404 patients, aged 45 to 55 years, were surveyed. Women with previous diagnosis of depressive disorder, antidepressant use, history of hysterectomy with or without bilateral salpingo-oophorectomy were excluded. Finally 202 premenopausal and 164 postmenopausal were studied. A score in the What's My M3? test ≥ 33 was considered as abnormal. Postmenopausal women had a higher score in the test than premenopausal women, 15 (0-69) and 6 (0-42) respectively ($p < 0.001$). In the sub-analysis of the What's My M3? test, also the postmenopausal women had statistically significant greater score in depression, anxiety, bipolar disorder, obsessive-compulsive disorder, and post-traumatic stress disorder. It was found that when older, the women had a higher score ($p < 0.001$), (Spearman's Rho, $p < 0.005$).

Conclusions: Postmenopausal women had higher score in the What's My M3? test than premenopausal women.

Key words: premenopause, postmenopause, depression, anxiety, bipolar disorder, obsessive-compulsive disorder, post-traumatic stress disorder.

Introduction

The menopause is a consequence of the decrease in ovarian function and oestrogen production [1]. These changes affect different levels, among them the psychological, so it has been reported that after the menopause the mental illnesses are exacerbated [2].

The perimenopause and the postmenopause have been associated with a greater frequency of depression than the premenopause [3]. Depression is a twice common in women than in men [4] and the risk is increased during the menopausal transition more than in the postmenopause [5]. The Study of Women's Health Across the Nation (SWAN) reported a greater probability of depressive symptoms in the late perimenopause (OR 1.73) and in the postmenopause (OR 1.63) in comparison with the premenopause [6]. In a systematic review, five studies did not show any association of the menopausal transition with depression, and 3 of them found a greater risk [7]. In Mexico in 2014 a rate of 110.5 cases per 100,000 was reported in those between 50 and 59 years of age; and in those between 60 and 64 years of age this rate was 145.2; in those over 65 years age it was 129.9 cases per 100,000 [8].

The frequency of the bipolar disorder (BPD) in the adult population is 3-5% and during the menopausal transition depressive symptoms are more frequent when compared with men of similar age [9], and in the transition from perimenopause to postmenopause they had more depression [10]. In Mexico it is estimated that 3 million people have this disorder [11]. In the United States of America the prevalence of the anxiety disorder is 26.6%, the prevalence being greater in women, which increases as age advances [12]. It has been reported that the anxiety increases from premenopause to perimenopause decreasing in the postmenopause [13]. The studies indicate a prevalence from 15.6% [14] to 53.7% in postmenopausal women [15], although a study reports that the difference between genders decrease after the woman's fertile age [16]. In the SWAN study, 51.9% of women reported feeling tense, while 24% reported severe anxiety in the early menopausal transition, 19% in the premenopause, and 16% in the postmenopause in relation with the intensity of vasomotor symptoms [17]. However, in a systemic review in the which 9 studies were analysed, it was concluded that the available studies do not offer solid data on the prevalence of anxiety

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disorders during the menopausal transition [18]. In Mexico at least 14.3% of the population has generalised anxiety disorders [19].

The prevalence of the obsessive compulsive disorder (OCD) in women is 0.2-1.6%, and the postmenopause prevalence is 7.1% [20], increasing during the postmenopause between 8% and 47% [21]. In Mexico between 2 and 4% of the population has OCD [22].

Post-traumatic stress disorder (PTSD) is more common in women with a 2 : 1 ratio with regard to men, and around the age of 50 years [23]. Also women are more prone to develop PTSD after being exposed to trauma [24].

The What's My M3? test is a self-evaluated test, which indicates the relative risk for depression, anxiety disorder, OCD, BPD and PTSD. The individual scores are added and if the final result has a value ≥ 33 , it indicates that psychiatric evaluation is required [25].

Due to the population increase, the emotional problems in pre- and postmenopausal women have also increased, so the objective of this study was to evaluate the differences in the What's My M3? test between pre- and postmenopausal women.

Material and methods

This study was carried out in the gynaecological endocrinology service of the hospital. All pre- and postmenopausal women that were included and attended the consultation lived in Mexico City. Premenopausal women constituted all those with regular menstrual periods, and postmenopausal all those with a minimum of 12 months of amenorrhoea after the menopause. In all them the presence of hot-flushes and vaginal dryness were investigated. The What's My M3? test was applied to all them. 404 women were interviewed among the age group 45 to 55 years of age. Those with previous diagnosis of depressive dysfunction, antidepressants use, and with history of hysterectomy with or without bilateral salpingo-oophorectomy, were excluded. Other medical history was not investigated.

For data analysis, the statistical program SPSS version 17.0 was used. Descriptive statistics, central ten-

dency and dispersion measures were used, the comparison among the groups was done with the Mann Whitney *U* test. Spearman's Rho was calculated between age and time since menopause with the What's My M3? score.

The protocol was accepted by Local Research and Ethics in Research Committee with the number R-2016-3606-4 and women gave their consent to participate.

Results

A total of 404 women were interviewed, and finally 202 premenopausal and 164 postmenopausal women were studied; 38 were excluded because they were hysterectomised.

The postmenopausal women were older than the premenopausal women: (45-55) years and 47 (45-55) years ($p < 0.001$), respectively. The time from the menopause was 2 years (1-13).

Both groups had hot flushes and vaginal dryness, which appeared at 49 (38-55) and 47 (40-55) years of age in premenopausal and postmenopausal women respectively. Hot flushes were less frequent in premenopausal women than in those postmenopausal (21.3% and 68.9% respectively, $p < 0.001$). Vaginal dryness was less frequent in premenopausal women than in those postmenopausal (14.4% and 67.7% respectively, $p < 0.001$).

When the total What's My M3? score was compared, the result was lower in premenopausal women than in postmenopausal women: 6 (0-42) and 15 (0-69), respectively ($p < 0.001$). When analysing separately each one of the What's My M3? test sections, a statistically significant smaller punctuation was found in premenopausal women in the depression, anxiety, OCD, BPD, and PTSD items (Table 1).

The proportion of women with a total score ≥ 33 was smaller in premenopausal women than in postmenopausal women (8% and 22% respectively, $p < 0.001$). In the correlation analysis, it was found that greater age correlated with greater What's My M3? score (Spearman' Rho 0.951, $p < 0.005$). No relationship was found among the time since menopause and the What's My M3? score.

Table 1. Partial and total scores in the What's My M3

	Premenopausal	Postmenopausal	<i>p</i>
Depression	5 (0-18)	9 (0-23)	< 0.001
Anxiety	1 (0-14)	3 (0-26)	< 0.001
Obsessive compulsive disorder	0 (0-12)	1 (0-12)	< 0.001
Bipolar disorder	0 (0-10)	0 (0-14)	< 0.001
Post-traumatic stress disorder	0 (0-6)	0 (0-8)	< 0.001
Total score	6 (0-42)	15 (0-69)	< 0.001

The results are expressed in median (minimum and maximum)

Discussion

Mental disturbances have important repercussions in women and their families. In this study the depression section score in the What's My M3? test was greater in postmenopausal women. This has already been reported, mainly during the menopausal transition [14].

The prevalence of hot flashes is maximal in the late menopausal transition because it occurs in 65% of women and in the first postmenopausal years and can be found in 50% of the women [3]. In this study there was a greater presence of hot flashes in postmenopausal women than in premenopausal women, and vaginal dryness was most often seen in postmenopausal women (67.7%), being greater than that reported in the literature (47%) [3].

The menopausal transition is associated with depression and anxiety; this occurs in 26% of the United States population, and it is greater in women, significantly increasing after 45 years of age. Anxiety was greater in postmenopausal women, in contrast to one study that reported that it decreases in the postmenopause [13] but in accordance with another indicating that it increases after the menopause [15].

The BPD was greater in the postmenopause as has been reported [9]. Also the OCD frequency was greater in the postmenopause which agreed with previously reports [16] and similar happened with the PTSD [20].

As is known, endogenous opioids are modified by oestrogens [26], also BPD and PTSD are influenced by these substances. The lack of oestrogenic effect has been related to the increment in affective disorders [15, 20, 23]. So, it is possible to think that the oestrogen fluctuation during perimenopause or oestrogen absence at postmenopause can trigger the increased frequency of these problems, and this time of life may be related to modifications in endogenous opioids.

It is worth mentioning that several other factors have been associated with the prevalence of these disorders; many of them are common to both premenopausal and postmenopausal women, but some of them are more common in the postmenopause, such as chronic diseases [27], and empty nest syndrome, but a weakness of this study is that these were not evaluated.

Thus it can be concluded that postmenopausal women had more mental status alterations than premenopausal women, so the information of this study can help to raise awareness that postmenopausal women require greater attention.

Disclosure

Authors report no conflict of interest.

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