Climacteric Syndrome as Indefinite Complaints

Satoshi OBAYASHI and Toshiro KUBOTA
Department of Comprehensive Reproductive Medicine, Graduate School, Tokyo Medical and Dental University

Introduction
The word, menopause implies the passage from the reproductive to the post-reproductive stage in woman’s life, which is defined as the cessation of menstruation for at least 1 year and can be confirmed by laboratory measurements by the depletion of ovarian hormones. This change generally occurs around 50 years old in Japanese women and is preceded by a period named perimenopause, which includes the stage at the beginning of menopausal symptoms. Apart from this hormonal depletion, many women during this period encountered varied change in their social and physical circumstances which include a loss of personal value, perceive physical and psychological and social devaluation. These factors are responsible to cause so-called “climacteric syndrome”.

Vasomotor symptoms like hot flushes, sweating and heart palpitation increase during the menopausal transition. Given the unpleasant and disruptive nature of these symptoms, it is likely that they would make a woman irritable, tense, or depressed, suggesting that an association between peri-/post-menopause and psychological distress is mediated by vasomotor symptoms. Few studies in cross-sectional analyses have shown that when vasomotor symptoms are included, the relationship between psychological symptoms and menopausal status is not significant. On the other hand, majority of studies do not indicate a relationship between menopause and various measures of mood disturbance. These data are based on Western, largely Caucasian, women and it is well known that rates of almost every symptom were lower in the Japanese than in groups of US and Canadian women of similar ages. Therefore, cross-cultural difference was recognized in menopausal symptoms and psychosomatic disorder.

Many Japanese women who have moderate or severe menopausal symptoms do not visit a medical service for treatment or counseling, and this condition was considered to some extent to draw from their prudent attitude toward hormonal side effects. The Japan Nurses’ Health Study (JNHS) had reported the frequency of hormone replacement therapy (HRT) users as 3.9% for women aged 45-49 years and 8.5% for 50-54 years. This number was significantly lower than other Asian countries such as 25% users in Taiwan. Because of this low rate of medication and consultation to gynecologists in Japan, it is essential to comprehend symptomatic variation in non-clinical base.

The aim of this review is to find out typical menopause symptoms in non-clinical Japanese as indefinite complaints, to compare these symptoms at intervals of 9 years and to find out the attention to psychosomatic disorder.

1. A community-based survey for non-clinical women
To clarify the frequency of menopausal symptoms, a community survey was performed in two close but different cities in Niigata prefecture two times, in 1997 and 2006, respectively. Participants were healthy Japanese women, aged 40-65, recruited for this study with an informed consent. The same and self-administered questionnaire regarding menopausal status, subjective symptoms
(simplified menopausal index : SMI) and the most noteworthy menopausal disease (including psychosomatic status) was utilized at intervals of nine years to this prefecture. Menopausal status was determined from answers to a series of questions about menstrual patterns and gynecologic surgery. This questionnaire also included some other physical conditions and backgrounds of the participants. Therefore, the study population of this survey was community-based and non-clinical. Women were excluded if they had undergone bilateral oophorectomy, received any kind of HRT in the past and now.

The age distribution of the responders were shown in Figure 1. The participants in 1997 was 442 and their mean age was 52.2 ± 0.35 years (mean ± s.e.mean) and the number in 2006 was 531 (mean age : 53.2 ± 0.28 years). First, the replied age at menarche in all women and the replied age at menopause in postmenopausal women were evaluated. At this step to analyze the menarche age, each group was divided into two groups, relatively younger and older by 52 years old (median number). The age at menarche was earlier in the younger group of both surveys, respectively (Figure 2). Furthermore, menarche age was not different between the older group in 1997 and the younger group in 2006 after 9 years, which suggested the identification of the objective population in this survey. On the other hand, menopausal age was significantly later in 2006.

Basic demographic characteristics of the participants were shown in Figure 3, in which the previous classification by age group was utilized again. The average body height was increased not only in the younger group of each survey year, but also in the corresponding year groups in 2006. Body mass index (BMI) showed no difference between the age groups. Employment status of the responders was evaluated and the results were shown in Figure 4. Both fulltime workers and part-time workers were significantly increased in 2006 and fulltime housewives were decreased by chi-square test in a similar way.

2. Prevalence rates of climacteric symptoms

In this survey, the questionnaire contained the self administrative item about their belonging to pre-menopausal, peri-menopausal or post-menopausal period. According to the original answer, we classified all of the participants into these 3 groups. The mean ages of pre-, peri- and post-menopause were 44.8 ± 0.38 years, 51.3 ± 0.43, 59.3 ± 0.42 in 1997 and the corresponding values in 2006 were 47.9 ± 0.40, 53.5 ± 0.33, 59.4 ± 0.37, respectively. The subjective menopausal symptoms

Figure 1: Age distribution of the responders in 1997 and 2006.
Figure 2  Comparison of menarche age and menopausal age. Each group was divided into two groups, relatively younger and older by 52 years old (median number). Results are shown as mean ± s.e.mean.

Figure 3  Basic demographic characteristics. Significant difference was observed by t-test in the corresponding age group. Results are shown as mean ± s.e.mean.
of 14 items were analyzed only in the "peri-menopausal period group" (Figure 5). Most high frequent symptoms as menopausal indefinite complaints were "shoulder stiffness" and "easy fatigue", which were followed by "sweating" and "headache" in 2006. "Shoulder stiffness" reached up to 50% of participants in both surveys, but "sweating" was significantly higher in 2006. On the other hand, "hot flushes" (23% of responders) was lower in 2006 than 1997.

The precise reason of this decrease in "hot flushes" was not obvious, but one possible explanation was that the difference of the 2 words, "sweating" and "hot flushes" had been ill-defined, because significant increase of "sweating" rate was inversely observed in 2006. These vasomotor symptoms were especially associated with menopause, but the prevalence of these symptoms in this survey as well as in other Asian survey was markedly lower than in Western report, in which hot flush prevalence was 47% and 55% for Latin America and European countries, respectively. Fuh et al. also reported that the low ratio (18.8%) of "hot flushes" in Asian perimenopausal women through face-to-face interviews, which neglected the poor understanding of identification and this number would be reliable as Asian hot flush prevalence. Because Japanese were consuming a high rate of soy products, the effect of phytoestrogens should be taken into consideration which had also not been established by now. Anyway, this low possible vasomotor symptom was the distinct profile in Asian perimenopausal women.

3. Evaluation of menopausal symptom

To evaluate menopausal symptoms, simplified menopausal index (SMI) was utilized, which was constructed with a total of 10 items regarding typical Japanese menopausal symptoms. Every question was given on 4-scales (none, mild moderate or severe), assigned scores of 0 to 14 points by each question and the maximum point was 100. Total numbers of these scores were calculated to estimate the degree of the menopausal symptoms, which was widely utilized in Japanese gynecologist and was well reverse proportion to the decrease of estrogen level in menopausal women. 50 points of SMI score was generally considered as the normal upper limit of menopausal syndrome without any medical intervention, and it was recommended to have some counseling and to have medical treatment over 50.

Figure 6 demonstrated the distribution of total SMI score of the participants in 1997 (left panel) and 2006 (right), and no significant difference was observed. Percentage numbers over 50 points were 14.6% and 11.1% in 1997 and 2006, respectively. The split analysis among pre-, peri- and post-menopause groups in 2006 was shown in Figure 7. The separated scores indicated the same allocation in 1997 (data not shown). In pre- and post-menopause, the SMI column chart indicated inversely proportional curve, which should be the characteristic distribution of SMI in non-clinical women who had few climacteric symptoms. On the other hand, the column in perimenopause could be modified by normal distribution model, which was also observed in the meno-
Figure 5 Prevalence rates of climacteric symptoms in peri-menopausal women, 1997 and 2006.

Figure 6 Distribution of total SMI score of the participants in 1997 (left panel) and 2006 (right).

Figure 7 Distribution of total SMI score among pre-, peri- and post-menopause group in 2006. The column in peri-menopause group could be modified by normal distribution model.
pausal clinic of our department. Therefore, this normally-distributed SMI diagram might be characteristic during peri-menopausal period.

The averages of SMI score were 19.7 ± 1.26, 33.5 ± 1.42 and 21.4 ± 1.77, and median values were 16, 32 and 18 points, in pre-, peri- and post-menopausal group, respectively. Mean SMI in peri-menopause was significantly higher than pre- and post- groups. The rates over 50 points in SMI score were also higher in peri-menopause.

4. Demand for a mental support in mid-life

It was reported that women were at a greater risk of becoming depressed than men. But the fundamental relationships between depressive symptoms and estradiol were not established and, therefore, a particular controversy had been occurred around the question whether depressed mood was caused by psychological factors or whether ovarian hormonal changes might play a significant role in its occurrence[34].

Three putative pathophysiology of perimenopausal depression are reported[35]. In the first theory, this change of mood is developed by the neurobiological change, in which estrogen has a direct effect to brain levels and metabolizes some neuro-transmitter such as dopamine, norepinephrine and serotonin. They have the potential power to impact emotion, and the dysfunction of these transmitters gives a possibility to induce mood disorder. The second theory was known as the “domino theory” in which somatic symptom such as “hot flushes” leading to a significant sleep disturbance might easily disrupt women’s mental condition. Vasomotor symptoms origined by changing estrogen level can secondary lead a woman in a downward spiral to depressive mood, as mentioned before. The third theory was “psychosocial theory”. Evolving social relationship and typical responsibilities during this period might mainly develop menopausal depression. The death of loved one or a child leaving especially made the “exit” or “loss” event and these drastic life events might induce the increased prevalence of depression.

The most noteworthy diseases for menopausal women were questioned in this survey (maximum 3 items which could be chosen), and the result was shown in Figure 8. The rates of “Osteoporosis” selection which were over 70% indicated no difference between 1997 and 2006. On the other hand, “Dementia” was significantly lower and “Psychosomatic disorder” was increased in excess of “Osteoporosis” in 2006, which suggested the demand for mental support of menopausal women were getting bigger and necessity of psychological intervention to Japanese perimenopausal women had recently increased. As shown in Figure 4, the rate of fulltime and part-time workers was increased in 2006, and this difference might evoke the high rates of psychosomatic disease by some stress by their occupation.

5. Conclusion

Unidentified complaints are frequently observed during peri-menopausal period, which are known as climacteric symptoms. Several of the symptoms are explained by the reduction of estrogen level during this period and are effectively managed by HRT. But a large part, in which HRT
achieves small effect, still remains and some psychological intervention should be worth a try. This study had a limitation regarding the small number of responders and different locations of the survey, but the observed difference of menopausal symptoms between the two time-points was very small which should indicate the general prevalence of these symptoms. Additionally, it was apparent that the needs of psychosomatic interference had increased recently. Taken together, profound consideration of the frequency of menopausal symptoms is essential to manage and to improve quality of life with psychosomatic procedure in peri-menopausal period.

Acknowledgements: we would like to thank Prof. Arito Noji (National Defense Medical College) and Prof. Takeshi Aso (Tokyo Medical & Dental University) for their contributions to study design, data collection during this survey.

References