Chapter 2

Epidemiology and Etiology

A woman is born with a finite range of eggs hold on within the ovaries. The ovaries additionally manufacture the hormones steroid hormone and progestin, that along regulate discharge and biological process. Change of life happens once the ovaries not unleash an egg monthly and menstruation stops.[1]

2.1 Etiology and Epidemiology of menopausal symptoms

Ovarian aging, as manifested by the clinically outlined biological time transition (MT), is characterised by the progressive loss of competent oocytes. The stages of the MT square measure primarily delineated by patterns of female internal reproductive organ hurt ensuing from progressive dysregulation of the neural structure pituitary-ovarian system and culminating in termination of bleeding, the final menstrual period (FMP).[1, 2]

It is troublesome to evaluate that symptoms can occur as women progress from premenopause to postmenopause and whether or not these changes square measure attributable to gonad aging specifically or square measure attributable to general aging and/or life changes usually practiced in midlife.[3] The menopausal transition is, by definition, related to alteration in emission cycles. Additionally, menses (excessive bleeding) has often been according by perimenopausal women. There are not any adequate semipermanent studies examining menses throughout the biological time transition. Any such studies would want to account for the presence of fibroids and alternative female internal reproductive organ conditions. Two parts of sexual dysfunction throughout the biological time transition are identified: painful intercourse ensuing from vaginal atrophy and dryness, and changes in sexual desire, arousal, and alternative aspects of gender. Currently, there is inadequate data information to conclude that biological time transition is related to either positive or negative effects on quality of life within the general population.[3]

Most women in menopausal period have according a minimum of one biological time symptom, like hot flushes, depressive mood, or sleep disturbance.[4] The prevalence of those symptoms varies wide and is probably going to be influenced by a spread of factors, together with climate, diet, lifestyle, women's roles, and attitudes relating to the tip of fruitful life and aging.[4, 5] The estimates of prevalence of vasomotor symptoms vary from 14 to 51 percent in premenopause, from 35 to 50 percent in perimenopause, and from 30 to 80 percent in postmenopause. Obesity and younger age of onset of menopause are associated with an increase in vasomotor symptoms.[3] Hot flush is that the most frequent symptom in perimenopausal women.[4, 6, 7] This symptom is caused by cutaneous vasodilatation, and frequently begins as an ascending flush of the higher body, ranging from the thorax. This leads to a sense of heat. The vasodilatation causes a decrease in body core temperature, leading to a sensation of cold that usually elicits shivering. Hot flushes usually occur at night (night sweats) and disrupt traditional sleep patterns.[8] Some studies indicated that this symptom could peak throughout the latter a part of

the menopausal transition when the cycles in menstruation period are lost and it tends to reduce after menopausal period.[9-11] The disorder for sleep appears to extend during a linear fashion over the menopausal transition period and postmenopause.[9] The prevalence of sleep disturbance varies from 16 to 42 percent in premenopause, from 39 to 47 percent in perimenopause, and from 35 to 60 percent in postmenopause. Estimates were derived from studies that included women with either surgical or natural biological change.[3]

Vaginal dryness becomes increasingly more common throughout the period of menopause. Estimates of the prevalence of vaginal dryness vary from 4% to 22% in premenopause, from 7% to 39% in perimenopause, and from 17% to 30% in postmenopause.[3] In numerous studies, the prevalence of mood symptoms varied from 8% to 37% in the premenopause, from 11% to 21% in perimenopause, and from 8% to 38% in postmenopause; whether natural or surgical.[3] Estimates of the prevalence of urinary symptoms vary from 10% to 36% in premenopause, from 17% to 39% in perimenopause, and from 15% to 36% in postmenopause; whether natural or surgical. No association appears to exist for exaggerated physical symptoms or cognitive problems during the menopausal transition.[3]

Table 1 is shown the prevalence of menopausal symptoms in Thailand.

Table 1 The prevalence of menopausal symptoms in Thailand

Author	**Symptoms prevalence**	**Setting**
Peeyananjarassri K, et al.2006[12]	Hot flushes 36.8% Night sweats20.8% Vaginal dryness55.3%	Hospital-based in Songklanagarind Hospital
Sueblinvong T, et al. 2001[13]	**Hot flushes** - 4.4% in premenopause - 25% in perimenopause - 27.3% after one year of menopause - 38.8% after two years of menopause - 40% after three years of menopause - 11.1% after four years of menopause - 10% after ≥5 years of menopause **Psychological symptoms** - 26.5% in premenopause - 25% in perimenopause - 54.6% after one year of menopause - 38.7% after two years of menopause - 32.2% after three years of menopause - 11.2% after four years of menopause - 11.8% after ≥5 years of menopause	Hospital-based in Chulalongkorn Hospital

Table 1 The prevalence of menopausal symptoms in Thailand

Author	Symptoms prevalence	Setting
Sueblinvong T, et al., 2001[13]	**Headache** - 29.4% in premenopause - 23.3% in perimenopause - 23.7% after one year of menopause - 22.6% after two years of menopause - 25.0% after three years of menopause - 11.1% after four years of menopause - 13.2% after ≥5 years of menopause **Vaginal dryness** - 5.9% in premenopause - 13.3% in perimenopause - 25.5% after one year of menopause - 25.8% after two years of menopause - 15.0% after three years of menopause - 16.7% after four years of menopause - 20.6% after ≥5 years of menopause **Muscle and joint pain** - 22.1% in premenopause - 43.3% in perimenopause - 56.4% after one year of menopause - 58.0% after two years of menopause - 45.0% after three years of menopause - 27.8% after four years of menopause - 28.0% after ≥5 years of menopause	Hospital-based in Chulalongkorn Hospital
Chompootweep S,et al., 1993[14]	86.9% of postmenopausal women have a problem with sexual desire	Community-based in Bangkok Metropolis Administration health centers
Sukwatana P, et al., 1991[15]	60% experienced abnormal symptoms - 92%hot flushes, - palpitations, - common symptoms with increased heat intolerance and frequent mood changes, - less problems with insomnia, weakness, anxiety and urinary system.	Community-based in the Bangkok Metropolitan area

Symptom Groupings

In the 1990s, the Menopausal Rating Scale (MRS)[16] was developed inresponse to the dearth of standardized measure to live the severity of aging-symptoms and their impact on the Health-Related Quality of Life (HRQoL). There are 11 symptoms that consisted within the standardized MRS:

1. Hot flushes, sweating (episodes of sweating)
2. Discomfort of heart (problem with heart beat, skipping heart, racing heart, and tightness)
3. Problems with sleep (hard to sleep, sleeping through difficulty, waking up early)
4. Mood depression mood (sad, feeling down, unreasonable of tears, loss of drive, and swings mood)
5. Irritability (nervous, inner tension, and aggressive)
6. Feel anxiety (inner restlessness, and feeling panicky)
7. Exhaustion in both physical and mental (performance decrease, memory impairments, decrease in concentration, and forgetfulness)
8. Sexual problems (change in sexual desire, in sexual activity and satisfaction)
9. Problemsin bladder (difficult to void, need to urinate frequently, and incontinence bladder)
10. Vaginal dryness of (induce dyspareunia)
11. Problems with joint and muscular (joints pain, and rheumatoid complaints)

All these symptoms in menopause are combined into 3categories with a varied range of complaints:

(1) psychological symptoms: irritability, anxiety, depression, and feel exhaustion
(2) somato-vegetative symptoms: hot flushes/night sweats, complaints of cardiac, disorders in sleep, and problems with joint and muscle
(3) urogenital tract symptoms: problems with sexual desire, complaints with urinary, and vaginal dryness.

Risk factors for menopausal symptoms

Recently, the National Institution of Health (NIH) State-of-the-Science Conference on Management of Menopause-Related Symptoms established that vasomotor symptoms were associated with biological time standing; lower bodily fluid steroid hormone levels, lower socioeconomic standing, smoking, less physical activity, and biological time attitudes towards change of life. Socioeconomic standing, stress, psychosocial factors, and former depression account for the next probability of depression throughout change of life than biological time standing. Lower socioeconomic standing, age, ethnicity, smoking, and fewer physical activities are related to physical symptoms. Menopausal standing is systematically associated with

vasomotor symptoms however inconsistently associated with psychological symptoms. aside from biological time standing, there's a lot of overlap in risk factors for various symptoms, suggesting that bound factors is also associated with symptom news generally and there is also a subgroup of ladies who are measure additional possible to report symptoms of any nature.[17]

In keeping with a scientific review of factors influencing age at climacteric known in recent studies (2000 – 2004), it is according that age at start, expelling length (>5days), BMI, education, marriage, parity, previous pill use, mother's age at climacteric, sister's age at climacteric and women who lived in urban resident are connected climacteric and symptoms.[18]

2.2 Etiology and epidemiology of hypertension in menopause

Hypertension in women is commonly unknown or inadequately treated, particularly once climacteric when vessel risk will increase. In premenopausal women, endogenous estrogens maintain vasodilation and so contribute to pressure level management. Aging and therefore the loss of endogenous steroid hormone production, causative to the high prevalence of cardiovascular disease in older women.[19] Higher blood pressure is values found in naturally menopausal women than in reproductive-aged women.[20]

Hypertension is far and away the foremost factor risk issue that affects women within the early postmenopausal years. regarding 30 to 500th of women develop high blood pressure (BP>140/90 mmHg) before the age of 60 and therefore the onset of high blood pressure will cause a range of symptoms that are usually attributed to climacteric.[21, 22] Mild to moderate high blood pressure could cause complaints like non-specific chest pain, sleep disturbances, headaches, palpitations, hot flushes, anxiety, depression, tiredness, etc.[23] Women with a family history of high blood pressure and women with a history of high blood pressure in physiological state are at increased risk to develop high blood pressure throughout the early postmenopausal years.[24] High blood pressure usually clusters with alternative risk factors like fat, elevated insulin resistance, polygenic disorder and lipid abnormalities. Within the WHI Study with almost 40,000 healthy women (>45years), it absolutely was shown that elevated pressure level will increase CV risk which high blood pressure could be a robust predictor for the event of sort II diabetes.[25, 26] Even in premenopausal women, sickness has been shown to be a potent risk factor for the presence of artery disease.[27] Despite the high prevalence of high blood pressure in old women, but 1/2 the patients receive adequate treatment, particularly within the older age bracket once the chance of CHD morbidity and mortality is highest.[28, 29]

The prevalence of high blood pressure has exaggerated over the last decade.[30] Essential hypertension accounts for over 90% of cases of hypertension[31, 32] and during a recent review, the period of time risk of turning into hypertensive in industrialised countries was calculated to exceed 90%.[33] Premenopausal women

have lower risk and incidence of high blood pressure compared with age-matched men however this advantage for women step by step disappears once climacteric. Once 65 years older, the next shares of women than men have high blood pressure, and therefore the gaps can possible increase with the continuing aging of the feminine population.[34] In women between the ages of 65 and 74 years, the prevalence of high blood pressure is as high as 58. within the us, the prevalence of high blood pressure and CVD rates among black women is especially more than white women[35] and more than 75% of postmenopausal women are hypertensive.[19] Table 2 shown the prevalence of high blood pressure in Thai women.

Table 2 The prevalence of hypertension in Thailand

Author	Prevalence	Setting
Puavilai W, et al., 2011[36]	2.19%in aged 40-69 years	Community-based in Districtof Ban Paew, Province of Samuthsakorn, Central of Thailand
Howteerakul N, et al., 2006[37]	17.8% in aged 35-60 years	Community-based in Thailand
Singh RB, et al., 2000[38]	11-18% in women	Community-based from the International Clinical Epidemiology Network (INCLEN)
Viriyavejakul A, et al., 1998[39]	In elderly - 16.7-47.2% (BP>140/90 mmHg) - 6.1-24.8% (BP>160/90 mmHg)	Community-based in four regions of Thailand

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