



AJMHR

Asian Journal of Medical and Health Research
Journal home page: www.ajmhr.com

An Analysis of Somato-Vegetative Menopausal Symptoms In Ayurveda

Divya Sreenath J¹; Anjali.M.V¹; Hemavathi.S.K^{1*}

1.Department of Prasutitantra and Streeroga, Amrita School of Ayurveda, Kollam ,Kerala

ABSTRACT

Menopause is defined as the permanent cessation of menses due to the loss of ovarian follicular activity. It is confirmed by the absence of menstrual periods for 12 consecutive months, without any other obvious pathology. The menopause is characterized by various psychological, somatic, urogenital symptoms which affects the quality of life of the menopausal women. As the life expectancy of women is increasing world-wide so that women had to spend almost 1/3rd of their life in the post-menopausal period. Hence there is a world-wide initiative to reduce the menopausal suffering for that a proper understanding of these symptoms especially the somatic symptoms in terms of Ayurveda is essential. It is observed somato-vegetative symptoms like hot flushes; sleep discomfort, palpitation and joint and muscular discomfort are due to the Vrddhi of vata associated with pitta and also due to the *kṣaya* of *kapha doṣa*'s along with *ksheena* of *Dhātu*'s leads to *rajonivṛtti janya vyādhi*.

Keywords: Menopause, *Rajonivṛtti*, MRS, somato- vegetative symptoms.

*Corresponding Author Email: drhemavathisk@gmail.com

Received 08 March 2018, Accepted 03 April 2018

Please cite this article as: Sreenath DJ *et al.*, An Analysis of Somato-Vegetative Menopausal Symptoms In Ayurveda. Asian Journal of Medical and Health Research 2017.

INTRODUCTION

Menopause is a universal phenomenon and an unavoidable physiological transition process in a women's life, which marks the end of women's reproductive capacity. It is caused by the depletion of ovarian function followed by the cessation of menstruation. Menopause is also a marker of biological ageing in women. Menopause refers to the permanent cessation of menstruation. As defined by the Stages of Reproductive Aging Workshop (STRAW) held in July 2001, the menopausal transition (MT) begins with variations in menstrual cycle length and a monotropic rise in follicle-stimulating hormone (FSH; no associated increase in luteinizing hormone [LH]), and ends with the final menstrual period, classically confirmed only when followed by 12 months of amenorrhea¹. As The Life expectancy of women is increasing world-wide and women are expected to spend one third of their life in the post-menopausal period. Currently, the number of menopausal women is about 43 million around the globe and projected figures in 2026 are estimated to be 103 million².

Rajonivṛtti is the term used for menopause in Ayurveda literature. It is composed of two words – *Raja*: + *Nivṛtti*. '*Raja*'³ is the term used as synonym for *Rakta*⁴, *Ārtava*⁵ etc. The term *nivṛtti* has following meanings 1) cessation 2) disappearance 3) inactivity 4) suspension. Thus the term '*Rajonivṛtti*' used here has similar terminology of menopause which is defined as the 'end or stoppage of menstrual cycle'. *Nivṛtti* is the term used by *Ḍalhaṇa* in his commentary. In *br̥hat tray*'s the term '*Kṣayam*' is used for denoting cessation of menstruation⁶ There is no identical term used in our classics to denote the last menstrual period. But reference like as in a decaying flower or fruit the fragrance is not explicit, similarly in males after the age of 70 years *śukraṃ* and in female after 50 years menstrual blood are not visible⁷. *Kāśyapa saṃhitā* '*śatapuṣpā śatāvarī kalpaṃ*' there is one description regarding '*Atikrāntā ārtavaṃ*' which can also be correlated to menopause.

Age at Menopause

The age at which natural menopause occurs is between 45 and 55 years for women worldwide⁸ with an average of 50 years, In India the menopausal age varies between 45 – 50 years, the average age being 48 years.⁹ Certain factors found to be responsible for lower age at menopause include socioeconomic status, poor nutrition, reproductive history and health care ignorance apart from genetic predisposition which is hard to establish¹⁰ There are very few direct references regarding menopause in *Āyurvedic* texts, *Ācāryā*'s are having a consensus of mind regarding the factum of occurrence of menopause at the age of 50 while *aruṇadatta* in his commentary mentioned that the age given is approximate and is liable to change¹¹.

Factors Affecting Menopause

Both cross-sectional and cohort studies have shown that a woman's age at menopause is strongly associated with her mother's age at menopause¹². Although the average age of onset of puberty has decreased over time, some studies indicated that there is no relationship between a woman's age at menarche and the timing of the menopause¹³. While some studies showed that age at menarche was significantly associated with age at menopause¹⁴. Linkage analysis studies pinpointed areas on chromosome X (region Xp21.3) suggest that there is chromosome associated with early (<45 years) or premature (<40 years) menopause¹⁵. In *Kāśyapa Saṃhitā śārīra sthāna* while explaining the concept of menarche *Ācāryā* has mentioned that the age of *rajapravṛtti* is determined by factors like *kāla*, *karma*, *āhāraviśeṣa* and *ārogyaṃ* just like that, we can consider *rajonivṛtti* also depends on *kāla* (age), *karma*, *āhāraviśeṣa* and *ārogyaṃ*. This view is also supported by a reference in *Aṣṭāṅga saṃgraha*, *Ācāryā* had mentioned that women who are habituated to use ghee, milk, who are cheerful, who belong to *kapha prakṛti* will retain the *Ārtava* for a long time; while those of opposite nature of these qualities will not retain *Ārtava* long.

Classification of Female Age According To Ayurveda.

Certain changes takes place in the body during certain time period. Considering these physiological changes a woman's life is divided into 3 different stages named as *bāla*, *rajasvalā*, *vṛddhā avastha*. *Bāla avastha* can be again divided in *kanyā* and *bāla*. *Kanyā* is the age group before menarche. *Bāla* is the age of 12-16 years. The *rajasvalā* epoch which is a *pitta pradhāna kāla* is further divided into *taruṇī* and *atirūḍhā*. *Taruṇī* age group is between 16-32 years while *atirūḍhā* group is between 32-50 years *Atirūḍhā* can be considered as late reproductive period and menopausal transition phase. In this phase there is a gradual decline of *saumya guṇā's* into a *vāta* dominant stage [*vṛddhā avastha*]. *Vṛddhā avastha* is the age group after the age of 50 or the menopausal age.

Menopausal symptoms and menopausal rating scale (MRS)

For assessing menopausal symptoms some of the most widely accepted scales are Menopause Rating Scale (MRS) which was selected for evaluating as it the most internationally accepted standard scale is the MRS, due to its reliability, short format encompassing all the associated symptoms and the simple scoring scheme.¹⁶ The menopause rating scale [MRS] is a health related quality of life scale, developed in Germany (by the berlin centre for epidemiology and health research) in the early 1990's and later it was modified and it has been translated into several languages. The first translation was from original German into English. The MRS questionnaire includes 11 symptoms divided into three areas –

- 1) Somato-Vegetative (4 items),
- 2) Psychological (4 items)

3) Urogenital (3 items).¹⁷

1) Somato-Vegetative symptoms include-hot flushes, heart discomfort/palpitation, sleeping problems and muscle and joint problems.¹⁸

Somato-vegetative symptoms

Hot flushes

Hot flushes is the most common health problem affecting the menopausal group which affects almost 75% of postmenopausal women¹⁹. Hot flushes is characterized by rapid episode of intense warmth that begins in the chest and may progress to the neck and face. Which is often accompanied with anxiety, palpitation, profuse sweating, red blotching of the skin and broken sleep. Hot flushes may sometimes followed with chills. An episode of Hot flushes may last from seconds to as long as an hour and may occur as often as hourly²⁰. With a Heart rate increases of 5 to 25 beats/min. Hot flushes can begin prior to the last menstrual period, with nearly 60 percent of women reporting them before any menstrual changes are experienced²¹.

Exact pathophysiology of hot flushes remains unknown. hot flushes are most likely multifactorial in origin²²Dysfunction of central thermoregulatory centers in the medial preoptic area of hypothalamus, caused by changes in the estrogen levels at the time of menopause has been postulated to be the cause of hot flushes perspiration and vasodilation which are the classic mechanism of heat loss are activated during hot flushes²³. Several other factors may lead to the thermoregulatory dysfunction²⁴. , based on several studies, that elevated norepinephrine plays a role in the aetiology of hot flushes.²⁵ And also changes in gonadotropin release through the hypothalamus, serotonin and interactions among prostaglandins, catecholamines, endorphins and other neuropeptides are been implicated as a cause for the hot flushes²⁶ Estrogen withdrawal rather than low circulating level of estrogen is said to be the leading cause for hot flushes.

In Asthanga saṃgraha, Ācāryā explained different conditions in nānātmaja vyādhi of pitta which can correlate with the symptoms of hot flushes. Uṣmādhikyam, atisvedam, oṣaṃ, dhūmaka etc. oṣaṃ is the burning sensation accompanied with sweating and restlessness. While dhūmaka is the felling of movement of hot fumes inside the head, neck, throat and palate. As there is Lakṣaṇa of the particular pitta doṣa is mentioned management is also according to the pitta upakrama. In pitta upakrama Ācāryā vāgbhaṭa has mentioned certain diets, regimen and therapy that will alleviate the condition. As the hot flushes is often accompanied with anxiety, sleeplessness Ācāryā has also specified certain things like residing in terraces lit with moon light, enjoying music, soft cold breeze, company of good friends, in good and calm sight-seeing for calm mind²⁷ Ācāryā Charaka has mentioned dāha Praśamana

*daśemāni*⁵² for the management of *dāha* .and *dāha Praśamana gaṇa* by *vāgbhaṭa*. Ācāryā *vāgbhaṭa* has also mentioned *dāha* and *dhumāyana* as *kapha kṣaya Lakṣaṇa*

Heart discomfort or palpitation

Certain researches shown that heart palpitations, in the chest or neck, occur during the menstrual transition²⁹. Heart palpitations, characterized as the awareness of the fluttering, hard or slow pounding, or skipping of the heart, it can be experienced by anyone at any time, but these are sometimes occurs as a manifestation of vasomotor effects in perimenopause⁵³ Palpitations can be intermittent or sustained and regular or irregular. They may accompany hot flushes. Heart rate [HR] increases of about 7 to 15 beats per min occur at approximately the same time as the peripheral vasodilation and sweating. Heart rate and skin blood flow peaks within 3 min of the onset of a hot flash³¹. Palpitations are most noticeable at night when external visual and auditory inputs are minimal and visceral sensations are prominent. The carotid arterial pulse, unlike venous pulsations, is palpable and may be evaluated to diagnose the peak of the pulse as well as the heart rate.[IMS] During the perimenopausal period, palpitations may be due to the rising levels of FSH It has also been proposed that deficiency of progesterone may also be a contributory factor since progesterone is responsible for a relaxing and calming effect³². And also Palpitations associated with menopause are caused by the fluctuating levels of Estrogen. As menopause is not the only cause of palpitations, it is necessary to get any abnormal cardiac rhythm to be evaluated before attributing it to menopause.

In Asthanga saṃgraha, *Hṛddrava* is mentioned as a *nānātmaja vāta vikāra* It is also mentioned in *rasa kṣaya* References about *hṛddrava* is also seen in *vātika hṛdroga Lakṣaṇa in Astanga hr̥daya*. Ācāryā *vāgbhaṭa* has mentioned *vidāryādi gaṇa* which is *hr̥dyā*, *bṛmhaṇa* and *vātapittaharā* . And also Ācāryā Charaka mentioned *hr̥dyāni daśemāni*.

Sleep Problems

Sleep problems is one of the hallmarks of menopause. One fourth to one half of all women will have some sleep complaint during menopause as compared to approximately 15% of the general population³³. Reproductive hormones play important roles in sleep physiology for women at different ages and times of their lives especially hormones like Estrogen, progesterone, Cortisol and melatonin plays a role. A study conducted in Britain shows that menopausal women were 3.4 times more likely to report trouble sleeping than premenopausal women³⁴. According to The Study of Women's Health across the Nation (SWAN), shows that the prevalence of sleep disturbance increases with increasing age. The prevalence in perimenopausal women varies from 39% to 47%; in postmenopausal females, the prevalence ranges from 35% to 60%³⁵. Sleep disturbances among menopausal women is multifactorial

and it may be associated to a number of factors like normal physiological changes associated with aging, poor health perception, menopausal-related symptoms, nervousness, stress, mood symptoms (e.g. depression and anxiety), and associated with chronic health issues³⁶.

Postmenopausal women had longer sleep latency, less slow-wave sleep, and less deep sleep as compared with premenopausal subjects³⁷. Post-menopausal women may have a number of sleep disorders including insomnia, obstructive sleep apnea (OSA) and restless legs syndrome (RLS) etc. In postmenopausal women, sleep is also disturbed by age related medical conditions, which include obesity, heart problems, gastrointestinal problems, urinary problems, endocrine problems, chronic pain problems, use of neuroactive medications³⁸. Vasomotor symptoms (VMS), particularly hot flashes, correlate strongly with subjective sleep complaints³⁹. Anxiety is also a contributing factor. Difficulty in initiating sleep has been shown to correlate strongly with anxiety, with non-restorative sleep also correlating strongly with depression⁴⁰. Rheumatoid arthritis has been found to be associated with poor sleep quality⁴¹.

In Āyurvedic classics *Ācāryā suśruta* explained *nidrā* occurs when the *saṃjñāvaha srotas* is become filled with *śleṣma* and is dominated by *tamoguṇa*, then sleep occurs in an individual. But if *śleṣma* has decreased and *anila* has increased and also in person whose mind and body are in troubles by disease then *svābhāvika nidrā* does not occur^{42,43}. *Ācāryā's* has also mentioned, *dhātukṣaya*, *vātavṛddhi* and *pittavṛddhi* etc as a cause for *nidrānāśam*⁴⁴. In the context of *nānātmaja vāta vikāra* *Ācāryā vāgbhaṭa* has mentioned *asvapnā* as a *vātavikāram*⁴⁵.

Joint and Muscular Discomfort

Age, weight, female sex, quadriceps weakness, and overloading of the knee joint are the main contributors than menopause in the incidence of osteoarthritis. Those contributing factors should be addressed on a priority basis. Almost all persons by age 40 have some pathologic change in weight bearing joint. OA strikes women more often than men and it increases in prevalence, incidence and severity after menopause⁴⁶. A study showed that there is some relation between Estrogen deficiency and osteoarthritis stated that, after oophorectomy it induced acceleration of cartilage degradation and erosion in rats indicate that Estrogen deficiency accelerates cartilage turnover and increases cartilage surface erosion⁴⁷.

Osteoporosis is a preventable chronic disease occurs among the post-menopausal women. It is a common condition that leads to an increased risk of fracture. A study by (National Osteoporosis Foundation [NOF], states that by 2030, individuals over 50 years of age with osteoporotic or low bone mass will be estimated to be 64.4 million world-wide. And More than 10 million individuals are affected with osteoporosis at the hip or lower back area (IOF,

2014); another study stated that osteoporosis and osteopenia prevalence in India was found to increase steeply after the age of 50 years⁴⁸. Osteoporosis is often called a silent epidemic as it does not have a dramatic clinical presentation except when fractures result. It can be diagnosed and treated before any fracture occurs. Sedentary life style is another important risk factor of osteoporosis. The diagnosis of osteoporosis is established by measurement of bone mineral density by dual-energy x-ray absorptiometry (DXA) of the spine, hip, and/or forearm (T-score of Y2.5 or lower) or by the presence of a low-trauma or fragility fracture. [NAMS] Vitamin D and calcium are essential to preventing osteoporosis, the exposure to sunlight provides vitamin D and it also reduce the risk of other health conditions, such as diabetes and immune system disorders etc.

Asthikṣaya: *Asthidhātu* (osteocyte) is necessary to maintain the body⁴⁹ *Vāta doṣā* and *Asthidhātu* are have *āsrāyāsrāyī* relation i.e. *vāta* resides in *Asthidhātu*. Therefore *Asthikṣaya* (osteopenia) occurs when there is *Vṛddhi* of *vāta doṣā*⁵⁰. The associated symptoms of *Asthikṣaya* include pain in bones, tooth decay, brittleness of nails, pain in joints⁵¹ As a result a woman is prone to fractures with mild injuries and osteoarthritis. In *māṃsa kṣaya Ācāryā* has mentioned *glāni* or weakness as a symptom. And also as there is decrease of *Dhātu's* *kapha kṣaya* increases considerably this *kapha kṣaya* leads to *Sandhiśaithilyam*⁵² When the *vāta doṣa* affects the *majjā dhātu* it may cause *asthi sauśiryam*.

DISCUSSION

As menopause is a *svābhāvika avastha*, under the influence of *kāla* aging process starts in each and every individual. *Śārṅgadhara* and *vāgbhaṭa* explained that decline of *dhātu's* takes place as per *kāla* (in decades) and *kāla* is also responsible for *svābhāvika vyādhi's* like *kṣut*, *pipāsa*, and *jarā*. Etc. While during *jarā-avastha* / *vṛddhā-avastha*, *vāta doṣa* gets aggravated with *madhyama pitta* and *Kapha-Kṣaya*. Due to the increased *vāta doṣa agnivaiśamyā* occurs which results into *jaṭharāgni* as well as *dhātvāgni vaiśamyā*. Therefore formation of *Dhātu's* specially *rasa* and *Rakta dhātu* does not occur properly, and also as a part of aging there is a gradual depletion of *Dhātu's* and it starts from *rasa dhātu* to end with *śukra dhātu*. And which is responsible for the menopausal symptoms. Which is not mentioned directly in Ayurveda classics. From the above points it is substantiated that the somato-vegetative symptoms palpitation, sleep problems, joint and muscular discomforts are mentioned as *nanatmaja vyādhi* of *vata* while hot flushes is mentioned as a *nanatmaja vyādhi* of *pitta*.

CONCLUSION

During this stage there is decline of the *saumya guṇa* into a *vata* dominant stage along with a mild increased *pitta* and the *kṣaya* of *kapha doṣa* is responsible for the menopausal symptoms. The somato-vegetative symptoms palpitation, sleep problems, joint and muscular

discomforts are mentioned as *nanatmaja vyādhi* of *vata* while hot flushes is mentioned as a *nanatmaja vyādhi* of *pitta*. Hence the somato-vegetative symptoms should be treated as a *vātapitta śamana* line of management.

REFERENCES

1. Soules MR, Sherman S, Parrott E, Rebar R, Santoro N, Utian W, et al. Executive summary: Stages of Reproductive Aging Workshop (STRAW). *Fertil Steril* 2001;76:874–8.
2. Bavadam L. HRT and older women in India. *HAI News*, 108. 1999. Aug, [Accessed on 2012 Mar 19]. Available from: <http://www.haiweb.org/pubs/hainews/aug1999.html>.
3. Acharya vāgbhaṭa , ashtanda Hridaya, commentaries of sarvanga sunndara of Arunadattaand Ayurveda rasāyana of Hrnadri, Chaunba subharatri prakashan , Varanasi, shareerasthana page no 363(A.h sa 1/7)
4. Prof.K. Srikantha murthy's Illustrated suśruta saṁhitā, jaikrishnadas Ayurveda series,chaukhambha orientalia ,Varanasi, second edition.2004, *Suśruta saṁhitā*, 1.14.5
5. Dr. Ram karan sharma , Vaidya Bhagwan dash,Agnivesa's Charaka samhitha based on chakrapani data's Ayurveda dipika chawkhambha Sanskrit series , Varanasi, reprint 2003,shareera sthanam, 225
6. Acharya vāgbhaṭa , ashtanda Hridaya, commentaries of sarvanga sunndara of Arunadattaand Ayurveda rasāyana of Hrnadri, Chaunba subharatri prakashan , Varanasi, shareerasthana page no (A.h sa 1/7)
7. Prof. K.R. Krishna murthy,Astanga saṁgraha of vāgbhaṭa. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi,8 th edition, A.s.sa 1/21
8. Sidhu S, Kaur A, Sidhu M. Age at menopause in educated women of Amritsar (Punjab). *J. Hum.Ecol*, 2005; 18(1): 49-51.
9. Wyon JB et al; Population index , 1996,32:328-329
10. Bairy, L., Adiga, S., Bhat, P. and Bhat, R. (2009) Prevalence of menopause symptom and quality of life after menopause in women form South India. *Australian and New Zealand Journal of Obstetrics and Gynecology*, **49**, 106-109. doi:10.1111/j.1479-828X.2009.00955.x
11. Acharya vāgbhaṭa , ashtanda Hridaya, commentaries of sarvanga sunndara of Arunadattaand Ayurveda rasāyana of Hrnadri, Chaunba subharatri prakashan , Varanasi, shareerasthana (A.h sa 1/7) arunadutta tikka de, B. J. P. et al. The role of genetic factors in age at natural menopause. *Hum. Reprod.* 16, 2014–2018 (2001).

12. Utian, W.H. (1989) Biosynthesis and physiologic effects of estrogen deficiency: A review. *American Journal of Obstetric and Gynecology*, 161, 1828-1831
13. Ginsburg J. What determines the age at menopause? *Br Med J* 1991; 302: 1288-9.
14. van Asselt, K. M. *et al.* Linkage analysis of extremely discordant and concordant sibling pairs identifies quantitative trait loci influencing variation in human menopausal age. *Am. J. Hum. Genet.* **74**, 444–453 (2004)
15. hauser g.a a new rating scale for the climacteric syndrome menopausal rating scale (MRS) *schwein med wochenschr* 1997; 127(40) 122-7.
16. markéta moravcová¹, Jiří mareš², stanislav ježek menopause rating scale – validation czech version specific instrument for assessing health-related quality of life in postmenopausal women. *ošetřovatelství a porodní asistence* 2014;5(1):36-45
17. Syed Alwi Syed Abdul Rahman¹, Siti Rubiah Zainudin, Verna Lee Kar Mun Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) among middle age women in Kuching, Sarawak, Malaysia Rahman et al. *Asia Pacific Family Medicine* 2010,9:5 <http://www.apfmj.com/content/9/1/5>
18. Mc kilay SM , jefferys M. the menopausal syndrome *Br j prevsoc med* 1974;28 : 108-115.
19. Kronenberg F. Hot flashes: epidemiology and physiology. *Ann N Y Acad Sci* 1990;592:52-86
20. Greendale GA, Lee NP, Arriola ER. The menopause. *Lancet* 1999;353:571-580
21. Hazel A. Philp, ND, Lac, Hot Flashes – A Review of the Literature on Alternative and Complementary Treatment Approache, *Alternative Medicine Review* Volume 8, Number 3 2003
22. Tait d shanafelt, debra .l.barton -pathophysiology and treatment of hot flashes- 220 *mayo foundation for medical education and research*.77; 1207-1218
23. Shanafelt TD, Barton DL, Adjei AA, Loprinzi CL. Pathophysiology and treatment of hot flashes. *Mayo Clin Proc* 2002;77:1207-1218.
24. Freedman R, Woodward S. Elevated α_2 -adrenergic responsiveness in menopausal hot flashes: pharmacologic and biochemical studies. In Lomax P, Schonbaum E, editors. *Thermoregulation: the pathophysiological basis of clinical disorders*. Basel: Karger; 1992. p 6–9.

25. Hazel A. Philp, ND, LAc Hot Flashes – A Review of the Literature on Alternative and Complementary Treatment Approaches Alternative Medicine Review Volume 8, Number 3 2003
26. Acharya vāgbhāṭa , ashtanda Hridaya, commentaries of sarvanga sunndara of Arunadattaand Ayurveda rasāyana of Hrnadri, Chaunba subharatri prakashan , Varanasi, 1.13.4-9
27. Dr. Ram karan sharma , Vaidya Bhagwan dash, Agnivesa's Charaka samhitha based on chakrapani data's Ayurveda dipika chawkhambha Sanskrit series , Varanasi, reprint 2003, 1.4.17
28. *menopause symptoms*. (2014). Retrieved from <http://www.34menopausesymptoms.com/irregular-heartbeat.htm>
29. Dengate, S. (2010). Heart palpitations and chest pain: Food intolerance network factsheet:
Atrial fibrillation and other heart rhythm disorders. Retrieved from <http://fedup.com.au/factsheets/symptom-factsheets/heart-palpitations-and-chest-pain>
30. North American Menopause Society (NAMS). (2004). Treatment of menopause-associated vasomotor symptoms: Position statement of The North American Menopause Society. *Menopause: The Journal of The North American Menopause Society*, 11(1), 11-33. doi:10.1097/01.GME.0000108177.85442.71. Retrieved from <http://www.menopause.org/docs/default-document-library/pshotflashes04.pdf?sfvrsn=2>
31. <http://www.womentowomen.com>. articles heart palpitations
32. Porter M, Penney GC, Russell D, et al. A population based survey of women's experience of the menopause. *Br J Obstet Gynaecol* 1996;45:21-31
33. Kuh DL, Wadsworth M, Hardy R. Women's health in midlife: the influence of the menopause, social factors and health in earlier life. *Br J Obstet Gynaecol* 1997;104:923-33.
34. Kravitz HM, Joffe H (2011) Sleep during the perimenopause: a SWAN story. *Obstet Gynecol Clin North Am* 38: 567-586.
35. Sun D, Shao H, Li C, Tao M2 (2014) Sleep disturbance and correlates in menopausal women in Shanghai. *J Psychosom Res* 76: 237-241.
36. Sadeka Tamanna, MD, MPH, and Stephen A. Major Sleep Disorders Among Women, 2013 Southern Medical Association.

37. Joffe H, Massler A, Sharkey KM (2010) Evaluation and management of sleep disturbance during the menopause transition. *Semin Reprod Med* 28: 404-421.
38. Sadeka Tamanna, MD, MPH, and Stephen A. Major Sleep Disorders Among Women, 2013 Southern Medical Association.
39. Terauchi M, Hiramitsu S, Akiyoshi M, Owa Y, Kato K, et al. (2012) Associations between anxiety, depression and insomnia in peri- and postmenopausal women. *Maturitas* 72: 61-65.
40. Sariyildiz MA, Batmaz I, Bozkurt M, Bez Y, Cetincakmak MG, et al. (2014) Sleep quality in rheumatoid arthritis: relationship between the disease severity, depression, functional status and the quality of life. *J Clin Med Res* 6: 44-52.
41. Prof.K. Srikantha murthy's Illustrated *suśruta saṃhitā*, jaikrishnadas Ayurveda series, chaukhambha orientalia , Varanasi, second edition.2004, 3.4.33
42. Prof.K. Srikantha murthy's Illustrated *suśruta saṃhitā*, jaikrishnadas Ayurveda series, chaukhambha orientalia , Varanasi, second edition.2004, sarira sthāna 4/33 slogam
43. Prof.K. Srikantha murthy's Illustrated *suśruta saṃhitā*, jaikrishnadas Ayurveda series, chaukhambha orientalia , Varanasi, second edition.2004, , 3.4.42-
44. Prof. K.R. Krishna murthy, *Astanga saṃgraha of vāgbhaṭa*. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi, 8 th edition, 1st volume pg no 373 A.s su (. 20/9)
45. Felson DT. The epidemiology of knee osteoarthritis: results from the Framingham Osteoarthritis Study. *Semin Arthritis Rheum.* 1990; 20(3 Suppl 1):42- 50.
46. Hoegh-Andersen P, Tanko LB, Andersen TL, Lundberg CV, Mo JA, Heegaard AM, et al. Ovariectomized rats as a model of postmenopausal osteoarthritis: validation and application *Arthritis Res Ther* 2004;6:R169-80
47. Babu, A.S., Iqbal, F.M., Noone, M.S., Joseph, A.N. and Samuel, P. 2009. Osteoporosis and Osteopenia in India: A few more observations. *Ind. J. Med. Sci.* 63(2): 76-77.
48. Prof. K.R. Krishna murthy, *Astanga saṃgraha of vāgbhaṭa*. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi, 8 th edition 1.1.32
49. Prof. K.R. Krishna murthy, *Astanga saṃgraha of vāgbhaṭa*. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi, 8 th edition, 1.19.3
50. Prof. K.R. Krishna murthy, *Astanga saṃgraha of vāgbhaṭa*. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi, 8 th edition, 1.19.6

51. Prof. K.R. Krishna murthy, Astanga saṃgraha of vāgbhaṭa. jaikrishna Ayurveda series, chaukhambha orientalia , Varanasi, 8 th edition , 1.19.5
52. Dr. Ram karan sharma , Vaidya Bhagwan dash, Agnivesa's Charaka samhitha based on chakrapani data's Ayurveda dipika chawkhambha Sanskrit series , Varanasi, reprint 2003, 1.4.17
53. Dengate, S. (2010). Heart palpitations and chest pain: Food intolerance network factsheet:
Atrial fibrillation and other heart rhythm disorders. Retrieved from <http://fedup.com.au/factsheets/symptom-factsheets/heart-palpitations-and-chest-pain>

AJMHR is

- Peer reviewed
- Monthly
- Rapid publication
- Submit your next manuscript at

info@ajmhr.com

