

HERBAL INTERVENTIONS IN MENOPAUSE - A REVIEW OF EVIDENCE BASED ALTERNATIVE

Renugaadevi Raja ^{1*}, Raxshiya Smily.J ¹, Aasha Banu. R ², Aarthi. S ², Rasiga Priya. K ², Yabika. K ²

¹ Assistant Professor, Swamy Vivekanandha College of Pharmacy, Thiruchengode.

² Ug Scholar, Swamy Vivekanandha College of Pharmacy, Thiruchengode.

ABSTRACT

Menopause is a natural biological transition characterized by the permanent cessation of menstruation due to declining ovarian function and reduced production of gonadal steroids. Predicting the onset of menopause, particularly during early and transitional stages, remains clinically challenging because of fluctuating hormonal levels and variable symptom presentation. This review outlines the stages of menopause, global prevalence, underlying pathophysiology, and the wide spectrum of associated symptoms, including vasomotor, genitourinary, psychological, and metabolic changes. Conventional management primarily involves hormone replacement therapy (HRT), which remains the most effective treatment for moderate to severe symptoms but is associated with potential risks such as thromboembolism, stroke, and hormone-sensitive cancers. Non-hormonal pharmacological options and dietary strategies offer alternative approaches for women with contraindications to HRT. Additionally, herbal, complementary, and Ayurvedic therapies—including phytoestrogens and adaptogenic herbs—are increasingly explored for their safety and symptom-relieving potential. An integrative approach may enhance quality of life during the menopausal transition.

INTRODUCTION

Predicting the onset of menopause particularly in its early stages is currently difficult menopause which gives women more control over their fertility is a normal part of ageing that involves a decrease of ovarian function activity this can happen on its own or as a result of other circumstances ^[1]. The permanent termination of menstruation brought by oocyte gonadal steroids is known as menopause. it is followed by a transitional period marked by irregular menstruation notable hormonal changes and a progressive decline ^[2].

STAGES OF MENOPAUSE

Pre-menopause:

A hormonal state in which a patient will report no noticeable changes in their hormonal status suggestive of perimenopause menopause they will persists to keep menses this possibility regular or irregular but there will be no obvious symptomatic changes for the patient in keeping with menopause.

Early menopause:

About 10 of women will expertise the termination of ovarian physiology between the ages of forty and forty-five if there are no other reasons of secondary amenorrhea {amenia} ^[3].

Peri-menopausal:

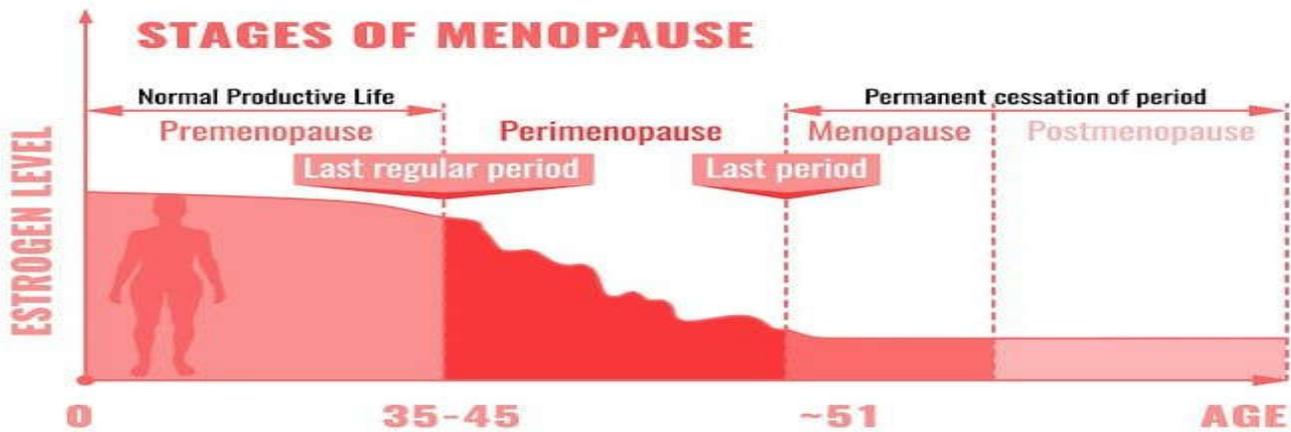
This period is known as the peri menopause in the meantime the body undergoes a number modifications primarily as a result of decreasing ovarian activity which lowers progesterone and Oestrogen synthesis ^[4].

Menopause:

Menopause is characterized clinically as the immutable termination menorrhagia brought on by a decrease in graafian follicular activity amenorrhea for a full year as long as the patient is not utilizing hormonal contraception.

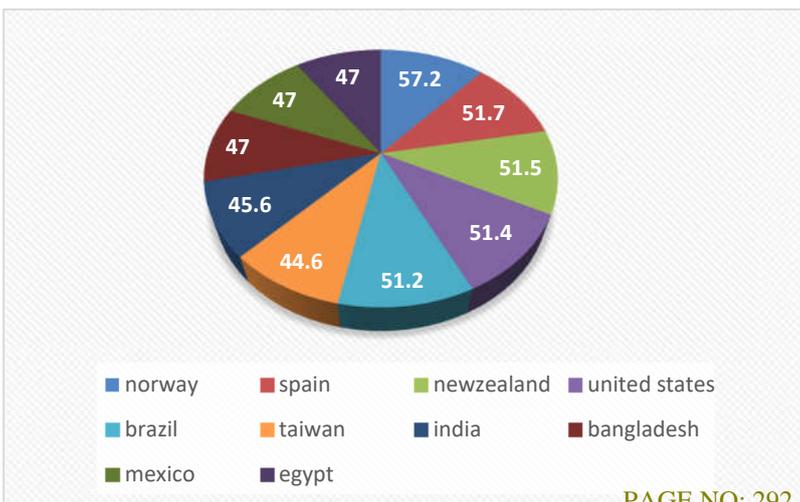
Post menopause:

An endocrinal state in which the patient has not expertise menstruation for continuous season and is not utilizing hormonal IUD to produce amenorrhoea [3].



GLOBAL PREVALENCE AND AGE

Almost all female expertise menses between the ages of 45 and 55 as a normal part of cellular aging. (world health organization, MENOPAUSE 16 October 2024). The legal plurality at menses is among 50.1 and 52.8 ages in Europe between 50.5 and 51.4 years in North America between 43.8 and 53 years in Latin America and between 42.1 and 49.5 years in Asia [5].



SYMPTOMS OF MENOPAUSE

Given that menses is correlated with endocrine shifts the signs may affect a person's wellness spiritual intellectual and social cohesion both during and after the shift.

Symptoms associated with menopause:

- Night sweats and vasomotor symptoms
- Sweat palpitations skin flushing
- Extreme emotions or physical discomfort variations in the menorrhoea regularity
- Flow resulting in the menses ending aridness in the vaginal uncomfortable
- While intercourse and incontinence challenges insomnia and sleeping mood swings, anxiety and misery ^[7].

TREATMENTS AND SIDE EFFECTS IN ALLOPATHY

HORMONAL REPLACEMENT THERAPY: -

- These are less effectual than HRT for signs like vasomotor symptoms hot flashes but are good alternatives
- Selective serotonin reuptake inhibitor serotonin nor epinephrine reuptake inhibitor -nausea
- Dry mouth dizziness and sleep disturbance
- Gabapentin peripheral oedema risk of mood suicidal thoughts ^[8].

SIDE EFFECTS:

- Venous thromboembolism.
- Stroke ^[9].
- Breast cancer ^[10].

NON -HORMONAL THERAPY: -

- These are less effective than HRT for symptoms like hot flashes but are good alternatives
- selective serotonin reuptake inhibitor /serotonin nor epinephrine reuptake inhibitor -nausea, dry mouth, dizziness and sleep disturbance.
- Gabapentin - peripheral oedema, risk of mood /suicidal thoughts ^[11].

PATHOPHYSIOLOGY OF MENOPAUSE

Blood levels of the follicle-stimulating hormone progesterone decrease when ovarian function weakens and Oestradiol decrease signaling the beginning of the menopausal transition FSH levels rise in tandem with these hormone levels vary there is a greater degree of variability noted with cycle pattern this cycle irregularity that accompanies the perimenopause is often associated with heavy bleeding episodes before progressing to infrequent menstrual cycle ^[12]

VASOMOTOR SYMPTOMS

cardiovascular symptoms which can vary in intensity and affect women between the ages of 75 and 80 are the most prevalent signs during the menopausal phase decades these signs and

symptoms can include palpitations migraines and sweating at night hot flashes which start as a flushing sensation and spread to the surface of the skin some women's sleeping habit and daily way of life of life they can occur at any time of day or night and usually last three to four minutes each vasomotor symptoms typically last one to six years but in ten to fifteen postmenopausal women they can last up to fifteen years due to changes in their nervous system functioningsmoking drinking and obesity during the early stages of menopause severe migraines which are neurovascular disorder caused by fluctuating Oestrogen levels can be made worse by physical inactivity and emotional stress after menopause most of the women observe an improvement in their chronic migraines but a few may experience worsening migraines with facial sensations which are associated with a higher probability of ischemic stroke especially when concurrently smoking or taking oral contraceptives a shift in hormone levels may also result in a rise in other

GENTOURINARY SYMPTOMS

between 50 and 75 percent of women experience the genitourinary syndrome of the menopause which thins as reduces the elasticity of the vaginal membrane because hormone receptors are present in both the bladder and the urethra these alterations may cause feeling dry burning pruritus irritation urgency and dysuria common signs of frequent urgent urination that may be caused by urethral atrophy

black women's sexual function degrades more slowly than that of Japanese and white women due to increased bacterial colonisation of the vagina with bladder pathogens caused by the drop in vaginal PH this loss could begin over two years prior to the last menstrual cycle obesity and diabetes are linked to more frequent episodes of urine incontinence rather than menopause or reduced Oestrogen however low Oestrogen effects can cause frequent urination during menopause ^[13].

CONVENTIONAL TREATMENT AND APPROACHES

The primary treatment for menopausal symptoms including dry vagina extended amenorrhea vasomotor symptoms irregular menstruation insomnia and mental health issues ^[14]. Therapy option as many women were unable to utilise it because of limitations including oestrogen-sensitive malignancies and thromboembolic diseases ^[15]. For yearly controls and examples of appropriate treatment that last less than five years include combination kinds that ensure an appropriate risk-benefit ratio amenorrhoea up to the age of ten early hrt administration before the age of sixty and customising the dose distribution techniques

- The **ESTROGENS** para the majority of the oestrogens that are prescribed are micronized 17b- estradiol ethinyl oestradiol and synthetic conjugated oestrogens is prescribed alone or in combination with a progestogen depending on the presence of any endometrial tissue oral transdermal and subcutaneous preparations are available there are risks and benefits to the different routes the oral route can lead to some undesirable metabolic effects caused by first pass metabolism and the transdermal route may mitigate some of these but can be limited by skin permeability skin reactions or patient acceptability subcutaneous preparations are usually reserved for women resistant to standard regimens and can be

- difficult to access vaginal preparations are not absorbed systemically at significantly levels are primarily prescribed for genitourinary symptoms^[16].
- **PROGESTOGEN** when utilizing an oestrogen rectifier progestogen is employed the most popular gestagens to prevent the development of endometrial thickening and rise the possibilities of aygestin nor-QD and depot medroxyprogesterone acetate of epithelium cancer
- **THE SELECTIVE ESTROGEN RECEPTOR MODULATOR(SERM)** conjugated equine oestrogen is utilized in combination with tamoxifen a new specific hormone receptor modifier to improve tissue selectivity however to reduce adverse effects including fluid retention each patient should establish the appropriate dosage of HRT cramping in the leg's headaches nausea and vaginal bleeding bloating and breast discomfort ^[14].

FIG 1: SERM (TAMOXIFEN)
OESTROGEN HORMONE



FIG 2: PROGESTROGEN HORMONE



FIG 3:



NON- HORMONAL THERAPY

neurokinin b antagonists and other SSRI are alternative pharmacological therapies for mild to severe postmenopausal VMS fatigue the FD Ahas approved serotonin inhibitor gabapentin clonidine oxybutynin norepinephrine and paroxetine at a daily dose of 75 mg can cause nausea and dizziness is less than the amount used for psychiatric purposes ^[17].

MEDICATIONS FOR VASOMOTOR MENOPAUSE SYMPTOMS

- **SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS) AND SEROTONIN/NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIS)** It is used to treat postmenopausal and perimenopausal women's vasomotor problems the SSRIs and SNRIs start to operate during the first week and can reduce hot flashes by 65 patient reaction varies and after a 1- to 2-week medication trial if one medication does not alleviate hot flashes another may be attempted escitalopram paroxetine and citalopram appear to have the fewest adverse effects

- **GABAPENTIN** some people found gabapentin to be a great substitute for HT for those who are unable to take oestrogen even though it has not received FDA approval as a hot flash remedy [18].

FIG 1: SSRI/SNRIS



FIG 2: Gabapentin medication



DIETARY STRATEGIES AND NUTRIENTS

Numerous non-traditional treatments have been tested to help with the negative changes associated with menopause such as yoga aromatherapy and dietary supplements [19].

Fish oil omega-3 fatty acids vitamin b-complex b1 b2 b3 b6 b12 folate antioxidant combinations vitamins a c e selenium zinc vitamin c alone folic acid alone and the supplements were categorised into multivitamin and multimineral formulations [20].

- **VITAMIN D** is a specific material that the body can produce with the help of sun exposures sometimes people don't have to consume vitamin d if they receive enough warmth each day the goal of vitamin d is to prevent problems with metabolism of vitamins in women who have gone through menopause and beyond because vitamin d is triggered by molecular changes in the liver and kidneys [21].
- **BLACK COHOSH (*CIMICIFUGA RACEMOSA* OR *ACTAEA RACEMOSA*)**, the tall-stemmed white-flowering black cohosh cimicifuga racemosa also called Actaea racemosa which is indigenous to Canada and the eastern united states and is a member of the Ranunculaceae family has long been used by native Americans to treat ailments including malaria wan zen kraut bugbane black snakeroot and rattling plant are other names for it. kidney impairment sore throats rheumatism lethargy irregular menstruation and childbirth in order to lessen the effects of climacteric symptoms on perimenopausal women and enhance their quality of life it is crucial to find treatments for menopausal symptoms that are safer less expensive and relatively effective than HT [22].

FIG 1: Vitamin D supplements



FIG 2: Black cohosh herbal plant



SYMPTOMS	DESCRIPTION	CONVENTIONAL TREATMENT
Hot flashes	Sudden feeling of intense heat, often accompanied by sweating and flushing.	Hormone replacement Therapy (HRT), SSRIs, SNRIs.
Night sweats	Excessive sweating during the night leads to disrupted sleep	HRT, clonidine, Gabapentin
Mood swings	Emotional instability, including irritability and anxiety.	Antidepressants, cognitive behavioral therapy (CBT).
Sleep disturbances	Difficulty falling asleep or staying asleep.	HRT, Sleepaids, CBT
Vaginal dryness	Dryness and discomfort in the vaginal area.	Vaginal estrogen, lubricants
Cognitive changes	Memory lapses and decreased concentration	Cognitive enhancers, HRT

COMPLEMENTARY THERAPIES

One in three women within their ages of 45 and 55 have utilised alternative therapies to manage menopausal symptoms because they were worried about the risks connected with hormone replacement medication according to a Uk poll [24].

- **ACUPUNCTURE** a type of Chinese therapy that involves inserting tiny needles into particular body parts has been the subject of multiple extensive randomized controlled trials non-insertive sham acupuncture controls on the other hand are designed to shorten and telescope into themselves while mimicking a needle-prick sensation using a blunt needle that does not pierce the skin numerous studies have validated these sham needles as realistic simulations of acupuncture and insertive sham acupuncture controls are becoming more widely acknowledged as a subpar acupuncture control method menopausal hot flash treatment tool and technique the cooling material that is used should ideally be able to keep the temperature of the cooling material Andor the area of the anatomy that comes into contact with it between roughly 34 and 50 degrees for a long enough period of time to continue giving the wearer cooling therapy [25].
- **DEVICE AND METHOD OF TREATING MENOPAUSAL HOT FLASHES:**
The cooling material used will preferably be one that will maintain a temperature of the cooling material and/or of the anatomy portion in proximity of contact with the cooling material in a range of about 34 degrees to 50 degrees and duration long enough to remain effective in providing cooling therapy to the wearer.

- **A COOLING PAD** in accordance with current innovation a cooling pad can actually or perceivably lower or maintain a constant body temperature which reduces hot flashes the pad should ideally be shaped to apply the cooling agent's sensation on the clitoris and labia rather than the urethra or vaginal entrance in order to provide relief from hot flashes the cooling pad is designed to be filled with a cooling ingredient such as gel or salt the gel used to relieve headaches which contains water a polymer menthol and a preservative is a popular cooling agent this gel uses an evaporation mechanism to deliver cooling that lasts for six to eight hours designed to be filled with a cooling ingredient such as gel or salt the gel used to relieve headaches which contains water a polymer menthol and a preservative is a popular cooling agent this gel uses an evaporation mechanism to deliver cooling that lasts for six to eight hours [26].

FIG 1: Cooling Pad for Hot Flashes



FIG 2: Acupuncture Pinpoint



JUSTIFICATION FOR HERBAL REMEDIES:

Decreased bone mass and a higher chance of menopausal heart issues including myocardial infarction and stroke are potential non-hormonal treatments for menopausal symptoms [27]. Plant-based medications show great promise in addressing menopausal symptoms numerous plant derivatives it has been demonstrated certain dietary estradiol requirements and heat flashes are lessened by soy isoflavones agitation signs and serum levels of acute phase protein c-reactive protein [28]. Numerous herbs including ginkgo biloba curcuma longa turmeric and St john's wort have been shown to have therapeutic potential in treating a range of ailments including depression inflammatory disorders and neurodegenerative diseases [29].

NATURAL ALTERNATIVES

In longitudinal research women are looking towards the alternative treatments to alleviate complication of menstruation and prevent osteoporosis and postmenopausal cardiovascular conditions vasomotor discomfort have been scientifically linked to exercise black cohosh may lessen signs of menstruation according to one study has demonstrated that soy reduces vasomotor symptoms reduce cholesterol ^[30].

WILD YAM

For the treatment of menopausal symptoms many women look for alternatives to hormonal therapy wild yam *dioscorea villosa* extracts which are used topically as a cream are one of the preferred therapies at the moment it has been suggested that the steroidal saponins in these preparations such as diosgenin affect endogenous steroidogenesis ^[31].

In order to investigate the effects of a wild yam cream on 23 healthy women with problematic menopausal symptoms we conducted a double-blind placebo-controlled cross-over study after a 4-week baseline period each woman received an active cream and a matching placebo for three months in a random order diaries were completed during the baseline period and for one week each month after that blood and saliva samples were then taken at baseline and at three and six months to measure lipids and hormones. ^[31].



EVENING PRIMROSE OIL

About twenty metabolites that possesses a characteristic smell and are yellow to greenish-yellow when unprocessed are present in evening primrose seeds because of the oils high oxidative instability manufacturers must make sure that the peroxide value is not more than 50 if the oil is has been intended for applications like intravenous medications effects of omega-6 fatty acids on immune cells and the synthesis of prostaglandins the mechanism of action of Oenothera oil is believed to involve cytokines and cytokine mediators. The effects of diagnosing premenstrual disorder seem to be comparable to an effect of placebo given that women are might be more reactive to the luteal stage due to decreased levels of prostaglandin e1 prolactin vitamin e and Oenothera oil isoflavones the maximum dailydose of Oenothera oil was 6000 mg and dosages ranged from 500 to 3000 mg either alone or in conjunction with vitamin b6 or vitamin E ^[32].



VALERIAN

Herbal medicines use the rhizomes and roots of valerian officinalis a member of the valerianaceae family to lessen depressive and anxious symptoms menopausal symptoms unilateral neurological headache and dizziness brought on by stress and neural pain valerian contains phytoestrogen compounds it may be a helpful pharmaceutical alternative for reducing the severity of hot flashes in menopausal women according to a number of clinical studies looking at valerian's effects on menopausal disorders [33].

who refuse hormonal therapy valerian a phytoestrogenic herb that contains volatile oils such as monoterpenes sesquiterpenes and valepotriates together with the components that result from their breakdown may be the best drug for lowering menopausal hot flashes [34].



RED CLOVER

Red clover is most likely safe to take as a supplement to reduce menopausal symptoms [32].

Hot flashes mood swings may result from a menopausal oestrogen deficiency reduced bone mass and other symptoms red clover contains phytoestrogens called flavanones and chalcones as well as resorcylic acid from cummestans lactones isoflavones and flavones which are utilised in preparations for hormone replacement treatment bioavailability is especially important the conventional genomic effects of phytoestrogens that exhibit anti-estrogenic or oestrogenic effects on nuclear receptors like ER α or Er β [35].



AYURVEDIC PERSPECTIVES

Menopause is a woman's natural movement from the pitta phase of middle age to the vata phase of old age according to ayurveda this shift can cause an imbalance of the vata dosha which can show up as a range of menopausal symptoms during this period dietary adjustments herbal therapies and lifestyle modifications can be implemented to improve overall health and restore equilibrium

AMALAKI (EMBLICA OFFICINALIS)

Indian gooseberry or amalaki is a powerful rasayana prized for its anti-aging and rejuvenating qualities it has historically been used to balance the body's doshas improve immunity and aid with digestion. its abundant phytochemical components which include vitamin c tannins polyphenols flavonoids and other antioxidants are thought to provide health advantages in terms of mechanisms of action pertinent to menopause treatment amalaki's adaptogenic and anti-inflammatory qualities promote general health and reduce a variety of menopausal symptoms while its high antioxidant concentration aids in the fight against oxidative stress a common problem during menopause



ASHWAGANDHA (WITHANIA SOMNIFERA)

Ayurvedic medicine the powerful adaptogen ashwagandha often known as Indian ginseng is prized for its capacity to improve reproductive health lower anxiety increase vitality and lessen menopausal symptoms among the mechanisms of action relevant to menopause treatment are maintaining hormonal balance through its effects on the endocrine system and enhancing cognitive abilities to address menopausal mood swings and memory issues its medicinal qualities are caused by phytochemical components like anolides alkaloids saponins and sitoindosides which control cortisol levels to lessen stress and anxiety.



SHATAVARI (ASPARAGUS RACEMOSUS)

The queen of botanicals Shatavari has long been prized in ayurveda for its healing properties especially in relation to female reproductive health in the past it has been used to enhance fertility control hormones and reduce menstruation and menopausal symptoms shatavari's phytochemical composition which includes mucilage alkaloids flavonoids and steroidal saponins, shatavarin's is responsible for its medicinal properties phytoestrogens which mimic oestrogen and help maintain hormonal balance are one of its methods of action that are pertinent to menopause treatment additionally its anti-inflammatory and antioxidant characteristics support general health and wellbeing and its adaptogenic features aid in reducing stress and anxiety.



BRAHMI (BACOPA MONNIERI)

Because of its mechanisms of action related to menopause therapy brahmis well-known neuroprotective and cognitive-enhancing qualities have long been used to promote mental clarity lessen anxiety and increase memory it is beneficial for women going through menopause who have mood swings and cognitive issues its phytochemical components which include flavonoids alkaloids and saponins like bacosides are thought to have therapeutic benefits by reducing oxidative stress and promoting neuronal connections brahmis anxiolytic properties enhance cognitive performance and assist in managing menopausal anxiety and stress.



CONCLUSION

Herbal therapies play an important role in the management of menopausal symptoms by offering safer, cost-effective, and well-tolerated alternatives to hormone replacement therapy. Phytoestrogen-rich and adaptogenic herbs such as black cohosh, red clover, ashwagandha, and shatavari help alleviate vasomotor, psychological, and genitourinary symptoms. Integrating evidence-based herbal medicine can enhance quality of life during menopause.

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