

# Phytoestrogens Medicinal Herbs - Safe and Effective Alternative to Hormone Replacement Therapy in Menopausal Syndrome

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## Abstract

**Background:** Menopause is a natural phenomenon which occurs as the age of a female progresses. The unpleasant changes experienced by the women during this phase are termed as menopausal syndrome which is characterized by psychosomatic disturbances. Hormone replacement therapy (HRT) is the conventional treatment practised for it, however HRT is associated with many side effects. Phytoestrogens, sometimes called "dietary estrogens" are a diverse group of nonsteroidal plant-derived polyphenolic compounds. They exhibit structural similarity and mimic the effect of naturally occurring estrogen compounds in the body. **Aim-** The present review is aimed at generating scientific data about medicinal plants containing phytoestrogens along with their mode of action. **Materials and Methods:** Literatures such as *Brihatrayee* (Three major compendia of Ayurved), *Nighantu* (Lexicon), modern textbooks written in 21<sup>st</sup> century, and journals from year 2000 upto 2016 were critically reviewed to explore safety and efficacy of phytoestrogens in Ayurvedic herbs. **Results:** The review revealed that the medicinal herbs effectively used in menopausal syndrome are *Shatavari*, *Ashok*, *Ashwagandha*, *Jeerak*, *Bala*, *Aamalaki*, *Methika*, *Kumari* and *Yashtimadhu*. These herbs contain phytoestrogens that mimic body hormones and reduce the severity of menopausal syndrome and improve Quality of life. **Conclusion:** Health benefits attributed to judicious use of phytoestrogen include relief from menopausal symptoms and lowering the risk of osteoporosis, heart disease and breast cancer.

**Keywords:** Ayurvedic Herbs, Hormone Replacement Therapy, Menopausal Syndrome, Phytoestrogens

## Introduction

One of the most important objectives of *Chikitsa* (therapy) in Ayurveda is *Dhatu-samyak* (homeostasis) which is also the most vital component of preventive medicine.<sup>[1]</sup> Menopause is the cessation of menses for one year due to a natural decrease in ovarian function<sup>[2]</sup> which occurs at an average age of 51 years. All women will pass through menopause, as it is a rite of passage and is likely to be perceived as being on the slippery slope of a steep and dreadful decline. The preliminary references regarding the description of menopause date back to the period of *Acharya* Charaka and *Sushruta*<sup>[3]</sup> and in *Ashtangahridaya*, where the age of menopause is also mentioned clearly.<sup>[4]</sup> In modern medicine, symptoms associated with menopause are credited to estrogen deficiency and estrogen (hormone) replacement therapy is promoted as the ultimate liberation of middle-aged women. Between the 1900's and early 2000's, Hormone Replacement Therapy (HRT) was seen as the only viable treatment for menopause. Growing influence of natural therapies in few countries, women now have accepted them as an alternative to HRT.<sup>[5]</sup>

While modern medicine equates the symptoms of menopause to these declining hormonal levels, Ayurveda interprets these symptoms to also be a part of the aging process and termed it as *Rajonivrutti* (menopause)<sup>[6]</sup> where during advancement of age there is a gradual diminution in the quality of *Dosha* (bodily humours), *Dhatu* (Bodily tissues), *Mala* (bio-wastes), *Agni* (metabolic capacity) and *Oja* (essence of tissues).<sup>[7]</sup>

Phytoestrogens also called "dietary estrogens" are a diverse group of nonsteroidal plant-derived polyphenolic compounds<sup>[8]</sup> which exhibit structural similarity and mimic the effect of naturally occurring estrogen compounds in the body. Phytoestrogens can be in the form of concentrated herbal extract formulas or in the form of whole drug. Instead of looking for active

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chemical components, paradigm should be on the trial of the whole drug. The present work is aimed at reviewing the literature associated with medicinal herbs containing phytoestrogens for its efficacy and safety as an alternative for HRT in Menopausal syndrome.

### Materials and Methods

Single drugs given under *Jeevaneeya* (life-promoters), *Vayasthapan* (rejuvenators) and *Balya* (strength-promoters) *Mahakashaya* (foremost decoctives) in Charaksamhita, along with compound formulations such as *Rasayan Yoga*, and *Achara Rasayan* opens new avenues for scientific researches related to this topic. The medicinal herbs containing phytoestrogens from the above group such as *Kumari* (*Aloe barbadensis* Miller), *Shatavari* (*Asparagus racemosus* Wild.), *Ashwagandha* (*Withania somnifera* Dunal), *Triphala* (Three Myrobalans), *Dashamula* (powder of ten roots), *Brahmi* (*Bacopa monnieri* (L.) Wettst.), *Mandukaparni* (*Centella asiatica* Linn.), *Punarnava* (*Boerhaavia diffusa* L), *Vidari* (*Pueraria tuberosa* (Willd.) DC), *Kumkum* (*Crocus sativus* L.), *Jayanti* (*Sesbania sesban* L.), *Vansha* (*Bambusa arundinaceae* (RETZ.)WILLD.) and *Amalaki* (*Embllica officinalis* Gaertn.) were reviewed thoroughly. Literatures such as *Brihatrayee* (Three major compendia of Ayurveda), *Nighantu* (Lexicon), modern textbooks written in 21<sup>st</sup> century, and journals published from year 2000 up to 2016 were appraised for this study.

### Observations

Women having menopausal syndrome are led to believe that estrogen deficiency must be replaced and medical intervention is needed. In majority of such women, the deficiency of estrogen which occurs during menopause does not need to be replaced; estrogen is only required for women who have aggravated menopausal symptoms due to deficiency of the hormones. Ayurveda and modern medicine have basic epistemological differences regarding treatment of menopausal syndrome. Management of menopausal syndrome based on Ayurvedic principles can not only reduce the menopausal symptoms but can also effectively address the aging and related problems. Ayurvedic herbs such as *Shatavari* (*Asparagus racemosus* Wild.), *Ashwagandha* (*Withania somnifera* Dunal), *Vidari* (*Pueraria tuberosa* (Willd.) DC), *Jivanti* (*Sesbania sesban* L.), *Bala*, *Vansha* (*Bambusa arundinaceae* (RETZ.)WILLD.), *Yashtimadhu* (*Glycyrrhiza glabra*) are traditionally used since primitive ages; especially in gynecological disorders.

Medicinal herbs described in various Ayurvedic compendia are extremely helpful in combating this syndrome which acts upon various systems of body. *Kumari* (*Aloe barbadensis* Miller), *Shatavari*, *Ashwagandha*,

*Triphala* (Three Myrobalans), *Dashamula* (powder of ten roots) *Brahmi* (*Bacopa monnieri* (L.) Wettst.), *Mandukaparni* (*Centella asiatica* Linn.), *Punarnava* (*Boerhaavia diffusa* L), *Vidari*, *Kumkum* (*Crocus sativus* L.), *Jivanti*, *Vansha* and *Amalaki* (*Embllica officinalis* Gaertn.) are said to be having considerable estrogenic activity<sup>[9] [10]</sup> and they can be considered as good source of phytoestrogens and recommended for all three *Doshas* (bio-elements) Vitiating. Along with these herbs, dietary regimen suppressing *Vata* (one of the three bio-elements) is said to be followed.

Correlation and integration of modern approach with ancient treasure of Ayurveda can help to easily combat this syndrome. Pathology in terms of Ayurveda and its associated curative herbs are explained as follows,<sup>[11][12]</sup>

- Vitiating *Apana Vata* (sub type of *Vata*) and *Rasa Dushti* (disorders of circulatory system) causes constipation and flatulence involving *Annavaha Strotas* (channel of food transport). Laxative and Carminative herbs such as *Triphala* (Three Myrobalans), *Ajamoda* (*Carum roxburghianum* Benth.) causes *Anulomana* of *Vata* and thereby facilitates easy movement of bowels and flatulence.
- Vitiating *Vyana Vata* (sub type of *Vata*) and *Rasa Dushti* causes systemic dryness involving *Rasavaha Strotas* (circulatory system). Demulcent herbs such as *Yashtimadhu*, *Ashok* (*Saraca asoca*) can be useful in this condition.
- Vitiating *Vyana Vata* and *Rasa Dushti* also causes vaginal dryness involving *Artavavaha Strotas* (channel carrying menstrum). Uterine tonics such as *Shatavari*, *Kumari* are useful in improving the vaginal lubrication and secretions.
- Vitiating *Vata* and *Mamsa Dushti* (vitiating muscle tissue) causes atrophic vaginitis involving *Artavavaha Strotas*. Muscle toners such as *Shatavari*, *Bala* (*Sida cordifolia*) are useful in improving the condition.
- Vitiating *Prana* (sub type of *Vata*), *Vyana*, *Samana Vata* (sub type of *Vata*) causes Anxiety, depression, insomnia involving *Manovaha Strotas* (channel carrying thoughts, emotions, ideas). Nervine tonics and sedatives such as *Brahmi*, *Jatamamsi* (*Nordostachys jatamamsi* DC.) are useful in resolving the changes at psychological level and thereby providing the relief to the woman.
- Vitiating *Samana Vata* causes hot flashes involving *Annavaha Strotas*. *Deepaniya* (stomachic) drugs such as *Dhanyak* (*Coriandrum sativum* L.) are useful in reducing the incidence of the same.
- Vitiating *Vyana Vata* and *Rasa Dushti* causes palpitations involving *Rasavaha strotas*. Cardiac tonics such as *Arjuna* (*Terminalia arjuna* Wight & Arn.) are useful in improving the cardiac activity and reducing palpitation.

➤ Vitiated *Vata* and *Shukra Dhatu Dushti* (diseases due to vitiating reproductive system) causes Hormonal imbalance involving *Artavavaha Strotas*. Endocrine tonics containing phytoestrogens such as *Vidari*, *Shatavari*, and *Ashok* are useful in maintaining the hormonal balance.

*Rajonivritti* is a consequence of *Jaraawastha* (old age), and *Vata* is the dominant *Dosha* during this stage. The correlation of symptoms with *Tridosha* theory clearly indicates the involvement of *Vata Dosha* in aging process and all the disturbances during *Rajonivritti* are directly co-related to various symptoms of menopause as degenerative changes in body. Hence regulation of *Vata Doshas* through herbs having pacifying effect are to be prescribed in an women suffering from menopausal syndrome.

Common complaints and the drugs used,

- Hot flushes in menopausal syndrome can be controlled by *Yashtimadhu* and *Guduchi* (*Tinospora cordifolia*)
- The symptoms of irritability and fatigue is relieved because of the synergistic effect of *Ashwagandha* (*Withania somnifera* Dunal), *Mandukaparni* (*Centella asiatica* Linn.) and *Shatavari* as these herbs possess rejuvenating properties
- The problem of depression relieved by the mood elevating properties of *Mandukaparni*, *Shatavari* and *Yashtimadhu*
- The bone and joint pain can be relieved by the analgesic and anti-inflammatory properties of *Yashtimadhu*, *Guggulu* (*Commiphora mukul* Hook.)
- Reduction in weight gain may be seen because of the properties of *Ashwagandha*, and *Punarnava* (*Boerhavia diffusa* Linn.)
- The symptoms of insomnia and headache can be relieved by the rejuvenating, analgesic, anxiolytic and sedative properties of *Mandukaparni*, *Shatavari*, *Yashtimadhu* and *Guduchi*
- The problem of excessive sweating can be resolved due to the action of *Vasa* (*Adhatoda vasica* Nees.) and *Punarnava* which show diuretic properties<sup>[11]</sup>

### Discussion

Menstrual syndrome is very exasperating when it includes vasomotor, genito-urinary, psychological and general manifestation of natural ageing process. Modern approach for grading of this natural stage into disease includes,

**(a) Vasomotor features:** includes hot flushes, night sweating, insomnia, palpitations & paresthesia

**(b) Genital and urinary features:** includes dyspareunia, dryness and atrophy of the vagina, atrophy of the vulva, with the vulval skin becoming pale, thin and almost

translucent, atrophy of the cervix, with glands ceasing their activities and accompanied by diminished mucous secretion and decrease in size and atrophy of the uterus

**(c) Psychological features:** includes anxiety, headache, irritability, depression and mood swings.

**(d) General features** such as: backache, pain in the joints and muscles and fatigability, dryness of skin, brittleness of hair, weight gain & osteoporosis<sup>[13]</sup>

American association of Clinical Endocrinologists recommends use of HRT in extreme cases of menopausal syndrome complicated with psychomotor and general manifestation<sup>[14]</sup> As HRT and selective estrogen receptor modulators (SERMs) are associated with an increased risk of breast cancer, ovarian cancer, heart attacks, strokes, increased risk of gallbladder disease, blood clots in the legs and lungs, as well as urinary leakage, their benefit is limited for short term use only. Studies have shown SERMs increases the risk of breast cancer uterine cancer, coagulopathies, depression, impaired memory, as well as hot flashes,<sup>[15]</sup> Hence, nowadays women are in search of a safe alternative among which Ayurveda herbal remedies, dietary phytoestrogens and lifestyle modification such as *Yoga & Pranayama* have become the most preferred choices. Herbs containing phytoestrogens that mimics body hormones, reduces severity of menopausal syndrome.<sup>[16][17]</sup> Exposition of women to phytoestrogens (isoflavones, lignans, coumestans of different botanical sources) in postmenopausal period may prevent the menopausal symptoms induced by declined endogenous estrogen production - hot flashes, vasomotor symptoms, vaginal atrophy, while no side-effect of these on breast and endometrial health have been observed.<sup>[18]</sup> Thus improvement in Quality of life is seen due to modified physical, psychological, social and environmental factors.<sup>[19]</sup>

The group of drugs described above can be used in aging population to alleviate menopausal as well as associated degenerative problems. Apart from the clinical approach, Laboratory-based analytical methods should be developed for the identification of phytoestrogens and other flavonoids from Ayurvedic herbs used in Menopausal syndrome. The extraction and isolation of such active constituents from finished Ayurvedic products will lead to important and strong analytical evidence of their physiological action. These phytochemical studies can be used as an endeavor for the scientific validation of single drugs and polyherbal preparations. Hence, combination of Ayurvedic herbs containing phytoestrogen, counselling, dietary regimen and lifestyle modification can be used as an alternative to HRT's in menopausal syndrome.

## Conclusion

*Jara* (Aging) is a natural process which influences the fluctuations in physiological functions. In today's fast pace of life, this physiological event exhibits with multiple and variable problems in an elderly women which are termed as Menopausal Syndrome. Single drugs and compound formulations described in various lexicons of Ayurveda, supported by scientific evidence opens new avenues in managing menopausal syndrome.

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