

UNANI PERSPECTIVE ON MENOPAUSE AND THE THERAPEUTIC ROLE OF PHYTOESTROGEN-CONTAINING UNANI MEDICINAL PLANTS WITH MODERN SCIENTIFIC EVIDENCE: A NARRATIVE REVIEW

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ABSTRACT

Background: Menopause is a physiological transition characterized by declining estrogen levels, leading to vasomotor, psychological, urogenital, and musculoskeletal symptoms that may adversely affect women's quality of life. Although hormone replacement therapy is effective, its use is limited by contraindications and potential adverse effects. This has increased interest in phytoestrogen-rich medicinal plants as safer therapeutic alternatives.

Materials and Methods: A narrative review was conducted using classical Unani literature, including *zakheera khwarzam shahi*, *Al qanoon*, *Al Akseer*, *Firdous al hikmat*, *Khazain-ul-Advia*, *Bustan-ul-Mufradat*, *Unani Pharmacopoeia of India* etc along with published scientific studies retrieved from electronic databases. Evidence regarding the phytoestrogenic activity and therapeutic potential of selected Unani medicinal plants in the management of menopausal symptoms was reviewed and synthesized.

Results: The review identified several medicinal plants, including *Withania somnifera*, *Linum usitatissimum*, *Foeniculum vulgare*, and *Trigonella foenum-graecum*, *Asparagus racemosus* with promising phytoestrogenic,

antioxidant, anti-inflammatory, and adaptogenic properties. Experimental and clinical studies suggest that these herbs may reduce vasomotor symptoms, improve sleep and psychological well-being, and enhance the quality of life of postmenopausal women.

Conclusion: Phytoestrogen-rich Unani medicinal plants show potential as complementary options for managing menopausal symptoms. However, larger, well-designed clinical trials are required to confirm their efficacy and safety before routine clinical use.

Keywords: Menopause; Unani medicine; Phytoestrogens; *Withania somnifera*; *Linum usitatissimum*; *Foeniculum vulgare*, *Trigonella foenum-graecum*. Methi, Alsi, Asgandh, Satavar.

INTRODUCTION: Menopause is a natural biological transition characterized by the permanent cessation of menstruation resulting from the depletion of ovarian follicular activity. It is diagnosed retrospectively after twelve consecutive months of amenorrhoea in the absence of any physiological or pathological cause. This phase marks the end of a woman's reproductive life and is accompanied by a wide range of endocrine, metabolic, psychological, and physical changes that can substantially influence overall health and quality of life. The average age of menopause in India is 47.5 years, with an average life expectancy of 71 years. Therefore, Indian women are likely to spend almost 23.5 years in menopause (Indian Menopause Society, 2007). Data shows that 25 million women globally enter menopause earlier each year. By calculations, it will result in 1.2 billion postmenopausal women by 2030 throughout the world (WHO, 2020) ^[1] Sixty million women in India are older than 55 years ^[2] According to Indian Menopausal Society research, there are about 43 million menopausal women in India and estimated that in 2026 India will have around 103 million menopausal women ^[3]

Although the Unani system of medicine does not describe menopause as a separate clinical entity, it discusses the cessation of menstruation under *Ihtibas al-Tamth* and associates the natural termination of menstruation with *Sinn-i-Yaas*. Classical Unani scholars attribute the physiological changes occurring during this stage to age-related alterations in temperament (*Mizaj*) and humoral balance, providing a traditional framework for understanding menopausal symptoms.

Hormone replacement therapy remains one of the established approaches for alleviating menopausal symptoms, particularly vasomotor disturbances. However, its use may be limited by contraindications, potential adverse effects, and concerns regarding long-term safety in selected women. Consequently, there has been increasing interest in plant-derived therapies with estrogen-like activity. Several medicinal plants described in Unani literature possess properties that may help relieve menopausal symptoms and improve quality of life. Exploring these traditional remedies alongside contemporary scientific evidence may contribute to the development of safer and more integrative therapeutic options for menopausal care.

REVIEW OF LITERATURE

UNANI CONCEPT

First evidence about menopause in the history of mankind can be traced from Ebers Papyrus 1500 BC ^[4] Unani system of medicine is enriched with the concept of *ihibas al-Tamth* (amenorrhoea) but there is no exact description of menopause, nevertheless it may be revealed under *ihibas al-Tamth* and can be correlated with *Sinn-i Yaas* (age of natural termination of menstruation). Fundamentals of Unani system divide human life into four stages which are as follows.

1. Sinn-i-Namu (up to 30 years of age, Har Ratab Mizaj)
2. Sinn-i-Shabab (30-40 years of age, Har Yabis Mizaj)
3. Sinn-i-Kahulat (40-50 years of age, Barid Yabis Mizaj)
4. Sinn-i-Shaykhukhat (above 50 years of age, Barid Yabis Mizaj).

Tabai Sinn-i-Yaas is attained at the age of 50 years and sometimes 60 years. As menstruation, usually stops at the age of 40-50 years, it comes under Sinn-i-Kahulat which is Barid Yabis in Mizaj (temperament). As Barid Yabis temperament is the quality of Khilt Sawda (black bile), we may infer that at this stage excess of Khilt Sawda developed in the body, makes less production of Ratubat Unsurya ultimately decreases the Hararat Unsurya and finally all Quwa (powers) of the body get decreased ^[5].

➤ **Zakariyya al-Razi** (850-925 AD) in his book **Kitab al-Hawi** has written that the cessation of menstruation is due to the predominance of cold and viscous humours causing obstruction in the uterine vessels.^[6]

➤ **Jurjānī** (12th Century AD) in his book **Dhakhīrā Khawārzam Shāhī** explained that advancing age weakens the expulsive power (*Quwwat Dafī'a*) of the uterus, leading to retention of waste materials that disturb the balance of humours and contribute to systemic symptoms. In this way they disturb the Mizaj (Temperament) of blood primarily and then of organs. The blood admixes with these wastes cannot be utilized for nutritive purpose satisfactorily ^[7]

➤ **Ibn Sina** (980-1037 AD), in his treatise **Al-Qānūn fi'l Tibb**, states that uterine atrophy accompanies advancing age and noted the occurrence of psychological, urinary, and respiratory complaints in some women after menstrual cessation.^[8]

➤ **Rabban Tabari** (810-895 AD) in his famous book **Firdaus al-Hikmat**, describes that cessation of menses occur due cold and dry temperament which may lead to cough and asthma liver and stomach disorders, palpitation, headache, ascites, hysteria, depression, and anxiety ^[9]

➤ **Al Majūsī** (930-994 AD) in his master piece **Kamil al-Sana** stated that in post-menopausal Women with passing years the size of uterus will be decreased and it will lead to Atrophy. There are common symptoms that are due to the cessation of menstruation, such as feeling heavy in the whole body and pain in the back and neck, and lack of appetite. And often such patients have symptoms like nausea, vomiting and mental disorders ^[10]

➤ **Ibn-e-Hubul** (1122–1213 AD), in *Kitab al-Mukhtar*, described that the predominance of *Khilt Sawda* is associated with dry, dark skin, anxiety, gastric burning, pigmentation, and disturbed sleep. He further stated that cessation of menstruation may lead to systemic changes, including dermatological disorders, impaired appetite, gastrointestinal and hepatic disturbances, cardiovascular weakness, neurological manifestations, cloudy urine, and androgenic features such as facial hair growth and voice deepening, reflecting widespread physiological alterations following menopause ^[11]

➤ **Hakeem Mohammed Kabeerudin** in his book '**al-akseer**' mentioned that prolonged retention of menstrual waste may predispose women to gastrointestinal, neurological, hepatic, and systemic disorders. According to Sahib Kamil, natural menstruation begins between the ages of ten to fourteen years and cease between the ages of thirty-six to sixty years.^[12]

GENERAL PRINCIPAL OF TREATMENT (USOOL-E-ILAJ):

Before commencing any treatment, Mizaj of a patient or organ must be evaluated. Menopausal symptoms can be corrected by following approach

1. Ilaj bid-Dawa 2. Ilaj bil-Ghiza 3. Ilaj bit-Tadbeer

1. Ilaj bid-Dawa: It includes correction of Su' Mizaj and elimination of excessive morbid Khilt.

2. Ilaj bi'l Ghidhā': Since postmenopausal women are considered to have a predominantly Barid Yabis (cold and dry) temperament, foods with relatively Har Ratab (hot and moist) qualities are recommended. Nutritious foods such

as milk, butter, dates, figs, almonds, pistachios, raisins, coconut, cashew nuts, carrots, eggs, and jaggery are traditionally advised to improve nourishment and maintain vitality. Small, frequent meals are preferred because digestive capacity may decline with advancing age. Foods that commonly produce excessive flatulence or digestive discomfort, including cauliflower, brinjal, jackfruit, and colocasia, should be consumed sparingly or avoided.^{[12][13]}

3. Ilaj bit-Tadbeer (Regimental therapy): Adequate rest, regular moderate physical activity (*Motadil Riyazat*), and maintenance of a balanced daily routine are considered essential. Moderate exercise helps preserve physical fitness, improves circulation, supports musculoskeletal health, enhances immunity, and may reduce the risk of chronic conditions such as hypertension, diabetes mellitus, and osteoarthritis. These measures also contribute to better psychological well-being and an improved quality of life during the menopausal transition.^[14]

MODERN CONCEPT ^{[1] [2]}

Definition: Menopause is defined as the permanent cessation of menstruation resulting from the irreversible loss of ovarian follicular activity. Clinically, it is diagnosed retrospectively after twelve consecutive months of amenorrhoea in the absence of pregnancy, lactation, or any pathological condition. The menopausal transition is associated with a progressive decline in ovarian hormone production, particularly estrogen, leading to various physiological and clinical changes:

Age of Menopause: The timing of natural menopause is primarily influenced by genetic factors, although environmental and lifestyle factors may also contribute. Most women experience menopause between 45 and 55 years of age, with the average age being approximately 50 years. Cigarette smoking, severe malnutrition, and certain medical conditions may accelerate ovarian ageing and result in an earlier onset of menopause. In contrast, factors such as age at menarche, parity, breastfeeding, socioeconomic status, body height, and previous use of oral contraceptives have minimal influence on the age at natural menopause.

Menstruation Pattern Prior To Menopause: Any of the following patterns are observed

1. Abrupt cessation of menstruation (rare).
2. Gradual decrease in both amount and duration. It may be spotting or delayed and ultimately lead to cessation.
3. Irregular with or without excessive bleeding. One should exclude genital malignancy prior to declare it as the usual premenopausal pattern.

Clinical Manifestations: The severity and pattern of menopausal symptoms differ between individuals. While some women remain asymptomatic, others experience symptoms that significantly affect their daily activities and quality of life.

- **Vasomotor symptoms:** The characteristic symptom of menopause is hot flush, palpitation, fatigue, and weakness. Sleep may be disturbed due to night sweats.
- **Genital & urinary system:** Estrogen deficiency produces urogenital atrophy
- **Psychological changes:** There is increased frequency of anxiety, headache, insomnia, irritability, dysphasia, and depression.
- **Osteoporosis and fracture, Cardiovascular disease, Cerebrovascular disease, Sexual dysfunction etc.**

MANAGEMENT:

Counselling: Every woman with postmenopausal symptoms should be adequately explained about the physiologic events. This will remove her fears, and minimize or dispel the symptoms of anxiety, depression, and insomnia.

Treatment:

Non-hormonal Treatment: Lifestyle modification includes:

- Physical activity (weight bearing), reducing high coffee intake, cessation of smoking and alcohol. There should be adequate calcium intake (300 mL of milk)
- Nutritious diet-balanced with calcium and protein is helpful
- Exercise-weight bearing exercises, walking, jogging
- Vitamin D supplementation

Hormone Replacement Therapy (HRT):

Indication of Hormone Replacement Therapy

- Relief of menopausal symptoms.
- Prevention of osteoporosis.
- To maintain the quality of life in menopausal years.

Risks Of Hormone Replacement Therapy: Endometrial cancer, Breast cancer, Coronary heart disease, Dementia, Alzheimer's etc.

PHYTOESTROGEN AND THEIR CLASSIFICATION: Certain foods and plant components contains phytoestrogens as a naturally occurring oestrogen, similar to oestrogen in function and structure. Phytoestrogens are classified into three types: isoflavones, lignans, and coumestan. By attaching to oestrogen receptors, phytoestrogens influence biological responses in plants and mimic the effects of endogenous oestrogens. Numerous studies have found that frequent consumption of phytoestrogens in Asian women's diets results in a reduction in menopausal symptoms, endometrial cancer, breast cancer, and an increase in bone mass when compared to other regions. The Unani system of medicine, referred to as Greco-Arabic medicine, is a popular form of traditional medicine widely practiced in many countries. This system utilizes herbs rich in phytoestrogen.

UNANI PHYTOESTROGENIC DRUGS WITH MODERN EVIDENCE:

Numerous medicinal plants described in classical Unani literature, including *Khazain-ul-Advia*, *Bustan-ul-Mufradat*, the *Unani Pharmacopoeia of India*, and other authoritative Unani texts, have been reported to possess phytoestrogenic properties. These herbal drugs may help alleviate menopausal symptoms through estrogen-like biological activity. Among the many phytoestrogen-containing Unani drugs, some of the most commonly used and extensively studied medicinal plants are discussed below.

ASGANDH/WINTER CHERRY (*Withania somnifera* Dunal): *Withania somnifera* (Asgandh), described in classical Unani texts including *Kitab-ul-Hashaish*, is regarded as *Harr Yabis* (hot and dry) in temperament. It contains several bioactive constituents, including withanolides, alkaloids, flavonoids, saponins, and β -sitosterol, which contribute to its antioxidant, anti-inflammatory, adaptogenic, neuroprotective, and anxiolytic activities. In Unani medicine, it is traditionally used as *Muqawwi al-Badan*, *Muqawwi al-Rahim*, *Munawwim*, and *Musakkin A'sab*. Clinical evidence indicates that supplementation with *W. somnifera* significantly improves menopausal symptoms, particularly hot flushes, night sweats, anxiety, and sleep quality, suggesting its potential as a safe complementary option for menopausal management. ^{[15][16][17][18][19]}

A single-blind RCT on 45 patients (2:1) where a six-gram powder of Asgandh twice daily was given in the intervention group. Wheat flour was administered in the placebo group for 12 weeks. A significant change in

Hamilton's anxiety score, PSQIDURAT for insomnia, hot flashes and night sweats were noted between the group. [20]



Figure 1. Withania somnifera (L.) Dunal (Ashwagandha/Asgandh): (A) Whole plant of Withania somnifera; (B) Dried roots of Withania somnifera.

ALSI/KATAN (*Linum usitatissimum* Linn):^{[15][16][17][18]}

Other Names: **Arabic:** Bazr-ul-Katan; **Persian:** Tukhm-e-Katan. **English:** Linseed, Flax Plant Common flax **Urdu:** Alsi, Katan.

Mizaj (Temperament) Unani physicians described the Mizaj of Alsi (*Linum sitatissimum* seed) as Hot and Dry 1° while some others categorised in 2° The Mizaj of oil is described as Hot and Wet in 1°

Pharmacological action: Analgesic, Anticancer, Antidepressants, Antidiabetic, Anti inflammatory, Antimicrobial, Bone development, improves heart function, hair growth, improves ovarian function

Phyto-chemistry: Fixed oil, mucilage, protein. phytin, lecithin, wax, resin, pigments, malic acid, acetic acid and the enzymes lipase, protease and diastase, β carotenes. Some Phytochemicals such as phenolic acids, cinnamic acids, flavonoids and lignins are also present Linseed is the richest source of lignans which are both antioxidants and phytoestrogens. Secoisolariciresinol-diglucoside is the main lignan. Other lignans isolariciresinol, pinoresinol, matairesinol and other derivatives of ferulic acid are also present.^[21]

Scientific evidence: Brzezinski et al performed another study to determine the effects of a diet rich in phytoestrogen on the complaints of women in the climacteric period. The women in the experimental group were given a diet rich in phytoestrogen (flaxseed, soy) for 12 weeks (n = 78) and nothing was given to the control group (n = 36). At the end of 3 months, the scores of the women in the menopausal group for menopausal symptoms, hot flashes, and vaginal dryness were significantly decreased, whereas the variation in the control group was insignificant ^[22]

In a randomized controlled study by Lewis et al, the effects of soy flour and flaxseed on quality of life and the frequency and strength of hot flashes in postmenopausal women were studied. Over 4 months, flaxseed were given to 28 women, soy flour was given to 31 women, and cookies made of wheat flour were given to 28 women. At the end of the study, the strength of the hot flashes was reduced in the women who ate flaxseed compared with the women who ate wheat flour ^[23]



Figure 2. *Linum usitatissimum* L. (Flaxseed/Alsi) (A) Flax seeds; (B) Flowering flax crop; (C) Flax flowers.

BADIYAN (*Foeniculum vulgare* Mill) ^{[15][16][17][18]}

Other names: **Arabic:** Bisbas, razianaj **English:** Bitter fennel, common fennel, sweet fennel, wild fennel **Hindi:** Saunf; **Urdu:** Saunf; **Persian:** Badiyan, Darazyana

Mizaj (Temperament): Hot^{2°} & dry²

Chemical constituents: All parts of fennel such as roots, leaves, fruit and especially the seeds are used. Fennel seed contains 6.3% water, 9.5% protein, 10% fat, 13.4% minerals, 18.5% fibers and 42.3% carbohydrates. Its leaves contain vitamins and minerals there are more than 30 types of terpene compounds in the essential oil of fennel, this herb also contains phenolic compounds such as flavonoids, phenolic acids, hydroxy cinnamic acids, coumarin and tannin ^[24]

Therapeutic effect: From ancient times, the drug was used in phlegmatic and melancholic diseases, stomach pain, flatulence and urinary disorders. Decoction is useful in palpitation, cough and difficulty in breathing. It is also used to increase breast milk, libido & menstrual irregularities. ^[25]

Pharmacological action: Antidiabetic, Antioxidant, Gastrointestinal effects, Cardiovascular effects, Hepato protective activity, Anti-inflammatory activity, Antithrombotic activity etc. ^[24]

Scientific evidence: Only one trial by Kian et al. assessed the effect of fennel on vasomotor domain of the MENQOL questionnaire. Vasomotor include three symptoms: hot flash, night sweet and sweeting. Vasomotor domain decreased significantly from 15.17 to 8 in fennel group ($P < 0.001$) and from 13.22 to 15 ($P = 0.02$) in placebo group.

According to the findings, the fennel had been reported important in relieving the vasomotor symptom, vaginal itching and dryness, dyspareunia, sexual function, sexual satisfaction and sleep distribution. Fennel may have the limited positive effect in patients with depression or anxiety disorder ^[26]



Figure 3. *Foeniculum vulgare* Mill. (Fennel) (A) Whole plant of *Foeniculum vulgare* (Fennel); (B) Seeds of *Foeniculum vulgare* (Fennel).

HULBAH /METHI (*Trigonella foenum graecum*):^{[15][16][17][18]}

Arabic- Hulba; **Urdu-** Methi; **English-** Fenugreek; **Hindi -**Methi

Mizaj (Temperament): Mizaj of Hulbah has been described in different classical books like

(1) Hot 1°, Dry 1° (2) Hot 2°, Dry 1° (3) Hot 2°, Dry 2° and (4) Hot 3°, Dry 3° (up, mkzn)

Phytochemical constituents: Alkaloids, Amino acids, Saponins, Flavonoids, Minerals, Vitamins.

Therapeutic effect: Ziabetus shakri, Ihtibas-e-Bawl wa Haiz, Warm-e-Rahem, Zof-e-Meda, Nafakh-e-Shikam, Qoolanj, Bawaseer, Sualqinia, Izm-e-Tehal wa Kabid, Inteshar-e-Shar, Wajaul-qutn, Falij, Taqteer-ul-Baul, Nazla, Suaal, Diq-al-Nafas, Dard-e-Chashm, Salabat-e-Rahim, Mudir-e-laban, Iltehab-i-Rahim, Quruh-i-Rahim, Kirmshikam, Zaheer-e-Muzminz, Waja-ul-Mafasil

Pharmacological action: Antiarthritic effect, Antibacterial and Antifungal activity, Hypolipidemic effect, Antehelminthic activity, Anti-inflammatory and analgesic activities, Hepatoprotective activity, Antidiabetic effect, Gastroprotective effect etc.^[27]

Scientific evidence: Estrogenic activities: The study conducted by Sreeja et al., concluded the evidence for estrogenic activities of fenugreek seeds. In vitro study showed that the presence of phytoestrogen.^[27]

A randomized, double-blinded, placebo-controlled trial demonstrated that standardized fenugreek seed extract (250 mg twice daily for 42 days) significantly reduced vasomotor symptoms, including hot flashes and night sweats, while also improving leg muscle and joint pain, vaginal dryness, and overall quality of life in postmenopausal women. These benefits were accompanied by favorable modulation of reproductive hormone levels without significant safety concerns.^[28]



Figure 4. *Trigonella foenum-graecum* L. (Fenugreek/Hulba)
Fenugreek seeds and leaves.

SATAWAR (*Asparagus recemosus* Willd):^{[15][16][17][18]}

Other names: Urdu: satawari; **English:** asparagus; **Hindi:** satavar, satamul

Mizaj/Temperment: cold and moist

Chemical constituents: sugar, glycoside, saponins, sitosterol

Therapeutic uses: Mugharri (Agglutinant), Muqawwi-e-Bah (Aphrodisiac) Mughalliz-e-Mani Muqawwi-e-Rahem (Uterine Tonic)

Scientific evidence: Phytochemical analyses have identified steroidal saponins (e.g., Shatavarins), quercetin, and other flavonoid glycosides as the principal bioactive constituents. Phytoestrogens in Shatavari are believed to modulate estrogenic activity by binding to estrogen receptors. Patibandla et al and other researchers have demonstrated the potential of Shatavari in alleviating perimenopausal symptoms, suggesting a plausible role for this botanical as a natural menopause treatment. ^[29]



Figure 5. *Asparagus racemosus* Willd. (Shatavari/Satawar)
(A) Whole plant; (B) Tuberous roots; (C) Cladodes (modified leaves).

SOYABEAN (*Glycine max* (L.) Merr.)^[30]

Scientific evidence: Soy isoflavones, a group of phytoestrogens predominantly found in soybean and its derivatives, have emerged as a potential alternative therapy for managing menopausal symptoms. These compounds, which primarily include genistein, daidzein, and glycitein, share structural similarities with human estrogen (17 β -estradiol) and can bind to estrogen receptors, particularly ER- β . These compounds can therefore exert weak estrogenic effects. Soy isoflavones have been shown to alleviate menopausal symptoms by acting as phytoestrogens, binding to estrogen receptors and exerting both agonistic and antagonistic effects, which can help reduce and alter vasomotor symptoms. Recent research has also underscored their potential in preventing bone loss, reducing cancer risk and exhibiting anti-obesity and anti-diabetes effects. These findings position soy isoflavones as key bioactive compounds in the management of menopause and promotion of women's health.

In addition to the medicinal plants discussed above, several other single Unani drugs, including **Soya, Sheuneez, Tagar, Badranjboya, Sapistan, Asle Soos, Ghariqun, Panwar, ustukhudoos Zafran**, and many more drugs have traditionally been used for the management of menopausal symptoms. Many of these herbs possess phytoestrogenic, adaptogenic, antioxidant, or neuroprotective properties, although robust clinical evidence supporting their efficacy remains limited.

LIST OF COMPOUND DRUGS USED IN THE MANAGEMENT OF MENOPAUSAL SYMPTOMS^[31]

1. Majoon Najah 2. Itrifal Zamani 3. Khamera Marvareed 4. Mufarreh Barid 5. Majoon Dabeedul ward 6. Majoon Lana 7. Dawaul Misk 8. Joshanda Aftimoon 9. Khamera Abreesham 10. Motadil Sharbat Ahmad Shahi

CONCLUSION:

Menopause is associated with hormonal changes that can significantly impair the physical, psychological, and social well-being of women. While hormone replacement therapy remains an effective treatment, its use is limited by contraindications and potential adverse effects. Classical Unani literature describes several medicinal plants with therapeutic potential for menopausal disorders, many of which have demonstrated phytoestrogenic and other beneficial pharmacological activities in modern studies. Medicinal plants such as *Withania somnifera*, *Linum usitatissimum*, *Foeniculum vulgare*, and *Trigonella foenum-graecum* have shown encouraging results in reducing vasomotor symptoms and improving quality of life. In addition, other Unani drugs, including Satavar, Sheuneez, Tagar, Badranjboya, Sapistan, Asle Soos, Ghariqun, Panwar, and Zafran, have traditionally been used for menopausal care and warrant further scientific evaluation. Well-designed randomized controlled trials are needed to establish their efficacy, safety, and mechanisms of action, enabling their evidence-based integration into menopausal management.

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