



Review Article

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## A LITERARY REVIEW ON THE AYURVEDIC PERSPECTIVE OF MENOPAUSE (RAJO NIVRUTTI)

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### Abstract

Menopause represents a universal biological milestone in a woman's life, characterised by the permanent cessation of ovarian follicular activity and menstruation. In modern medicine, this transition is defined by a decline in oestrogen and progesterone levels, manifesting in a complex of vasomotor, psychological, somatic, and urogenital symptoms collectively referred to as menopausal syndrome. Conventional management primarily relies on Hormone Replacement Therapy (HRT), which is limited by long-term safety concerns, including increased risks of breast cancer, thromboembolism, stroke, and gallbladder disease.

Ayurveda conceptualises menopause as *Rajo Nivrutti*, viewing it not as a pathological condition but as a natural physiological transition (*Swabhavika Vyadhi* or *Jarajanya Vikara*) associated with the ageing process (*Jara*). This transition marks the shift of the body's dominant state from *Pitta*-dominant *Madhyamavastha* (middle age) to *Vata*-dominant *Jaravastha* (senescence), resulting in systemic tissue depletion (*Dhatu Kshaya*).

This review evaluates and synthesises classical Ayurvedic literature, modern endocrine pathophysiology, and recent clinical evidence regarding the management of *Rajo Nivrutti*. Data compiled from classical compendia (*Sushruta Samhita* and *Charaka Samhita*) and contemporary databases (PubMed and Scopus) reveal that Ayurvedic interventions —

specifically *Rasayana* (rejuvenating) herbs, *Panchakarma* (bio-purification) therapies, and holistic lifestyle modifications — offer scientifically validated, non-hormonal alternatives. Standardisation of these therapies presents a viable strategy for enhancing quality of life in menopausal women globally.

**Keywords:** *Rajo Nivrutti*; Menopause; *Dhatu Kshaya*; *Shatavari*; *Ashwagandha*; Integrative Gynaecology.

## Introduction

The global increase in female life expectancy has fundamentally shifted public health priorities, with modern women spending nearly one-third of their lives in the post-menopausal state. Menopause is clinically defined as the permanent cessation of menstruation following twelve consecutive months of amenorrhoea resulting from the loss of ovarian follicular activity, typically occurring between the ages of 45 and 55 years.<sup>(13)</sup> The decline in ovarian endocrine function triggers a systemic hypoestrogenic state, leading to acute symptoms such as hot flashes, night sweats, insomnia, anxiety, depression, and vulvovaginal atrophy, as well as long-term metabolic sequelae including osteoporosis and cardiovascular disease.

While conventional medicine relies on Hormone Replacement Therapy (HRT) as the gold standard for symptom control, safety data from large clinical trials have linked prolonged HRT to elevated risks of neoplasia and cardiovascular events, prompting patients and clinicians to seek safer, non-hormonal alternatives.<sup>(1,24)</sup> Ayurveda offers a comprehensive framework that addresses this physiological milestone through personalised, preventive, and restorative therapies. By conceptualising menopause as *Rajo Nivrutti*, a natural senescent process rather than an endocrine disease, Ayurveda implements therapeutic protocols aimed at restoring homeostatic balance through dietary modifications (*Ahara*), lifestyle practices (*Vihara*), bio-purification (*Shodhana*), and rejuvenation therapy (*Rasayana*).<sup>(2,7,11)</sup> The present review aims to critically evaluate and synthesise the available evidence regarding the Ayurvedic perspective of menopause (*Rajo Nivrutti*).<sup>(1-3,25)</sup>

**Literature Search Strategy and Selection Criteria:** To provide a comprehensive synthesis of the Ayurvedic conceptualisation and clinical management of menopause, a systematic literature search was conducted across multiple databases up to January 2026. Primary databases — including PubMed, Scopus, Web of Science, and Google Scholar — were searched using combinations of classical Sanskrit and modern clinical terminology. The search strings comprised combinations of the following keywords: “*Rajonivritti*”, “*Rajo*

*Nivrutti*, "menopause", "Ayurveda", "menopausal syndrome", "Shatavari", "Ashwagandha", "Basti", "phytoestrogens", and "Dhatu Kshaya".

Inclusion criteria comprised peer-reviewed randomised controlled trials (RCTs), prospective clinical studies, systematic reviews, meta-analyses, and case series evaluating Ayurvedic interventions for menopausal symptoms. Exclusion criteria involved non-peer-reviewed articles, commercial websites, and predatory journals. Simultaneously, authoritative classical Ayurvedic texts: primarily the *Charaka Samhita*,<sup>(14)</sup> *Sushruta Samhita*,<sup>(8,10)</sup> *Ashtanga Hridaya*, and *Bhaishajya Ratnavali*: were reviewed to extract original theoretical concepts, aetiological pathways (*Samprapti*), and therapeutic principles (*Chikitsa Siddhanta*). The quantitative outcomes of the literature search and screening process are summarised in Table 1.

**Table 1.** Literature Search Summary

Database	Search Terms Used	Initial Hits	Screened Articles	Included Studies
PubMed	(Rajonivrutti OR "Rajo Nivrutti") AND Ayurveda	84	45	8
Scopus	Menopause AND Ayurveda AND ("clinical trial" OR "herbal")	142	68	10
Web of Science	("menopausal syndrome" OR "vulvovaginal atrophy") AND Ayurveda	95	40	7
Google Scholar	Shatavari AND Ashwagandha AND menopause	310	85	15

As shown in Table 1, the systematic search strategy yielded a robust repository of studies. These studies were filtered to ensure that only high-quality, peer-reviewed clinical data and classical textual references were synthesised into the narrative of this review.

## Review of the Ayurvedic Perspective

**Nirukti, Etymology, and Classical Context:** The term *Rajo Nivrutti* is a compound Sanskrit word derived from *Rajah* (referring to *Artava* or menstrual fluid, recognised as an *Upadhatu* of *Rasa Dhatu*) and *Nivrutti* (signifying cessation, termination, or retirement), thus translating literally to the permanent cessation of menstrual flow.<sup>(2,7)</sup> In classical Ayurvedic texts, this phase is categorised as a *Swabhavika Vyadhi* (a naturally occurring, inevitable physiological condition), akin to hunger (*Kshudha*), thirst (*Pipasa*), sleep (*Nidra*), and senescent decay (*Jara*).<sup>(11,25)</sup>

The classical timeline for this transition is explicitly defined in the *Sushruta Samhita* (*Sutra Sthana*, Chapter 14, Verse 4):<sup>(8)</sup>

“रसादेव स्त्रिया रक्तं रजःसञ्ज्ञं प्रवर्तते | तदुष्णद्विदादशादूर्ध्वं याति पञ्चाशतः क्षयम् ||”

This verse establishes that the menstrual cycle, which initiates at approximately twelve years of age (menarche), naturally ceases by fifty years of age as the female body falls under the influence of senile decay (*Jarapakva* body status).<sup>(8,10)</sup> Commentators such as Arundatta clarify that fifty years is not an absolute threshold but a general biological guideline; the actual age of cessation varies individually based on genetic constitution, environmental factors, nutritional status, and lifestyle.<sup>(11)</sup>

**Etiology (Nidana) and Pathogenesis (Samprapti):** In Ayurveda, the physiological cessation of menstruation is driven by several chronological and systemic factors.<sup>(2,7,25)</sup> The primary aetiological drivers (*Nidana*) of *Rajo Nivrutti* include:

**Kala** (Time/Ageing): The chronological progression of life decades naturally brings about structural and functional transitions.

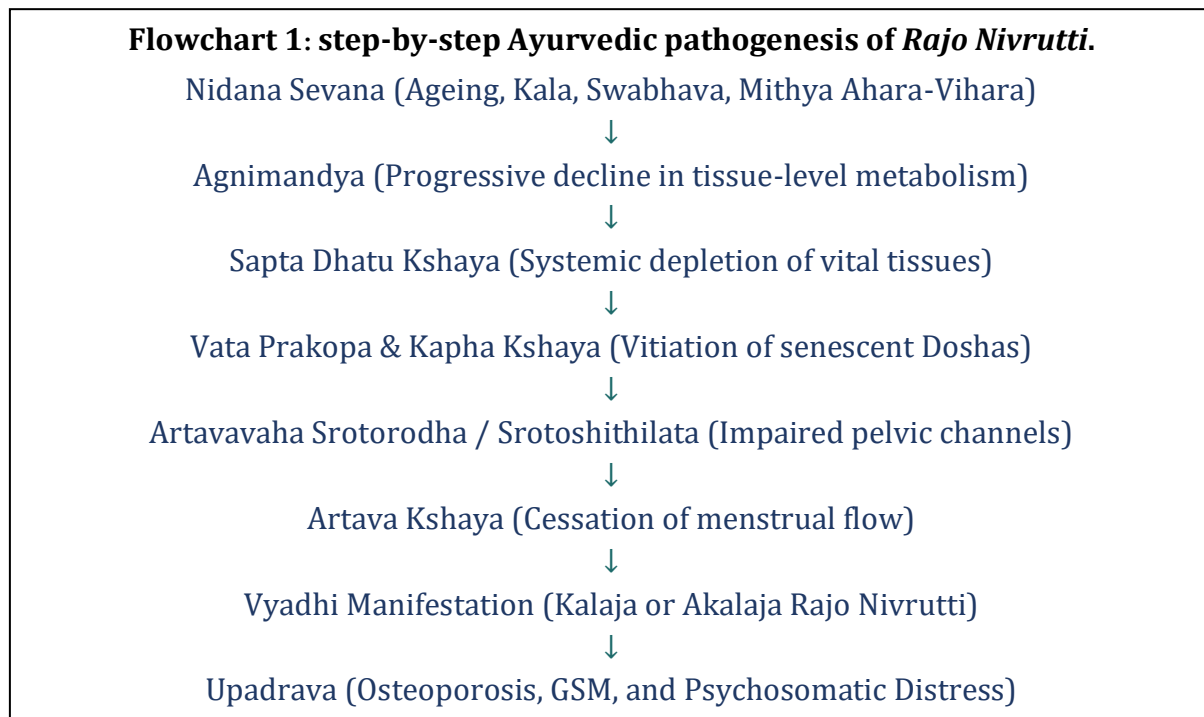
**Swabhava** (Inherent Nature): The biological programme of natural degradation (*Swabhavoparam Vada*), which dictates that all manifesting entities undergo deterioration and eventual dissolution.

**Vayu** (Predominance of Vata): Chronological ageing represents a transition into *Jaravastha* (senescence), a phase of life governed by *Vata Dosha*.

**Dhatu Kshaya** (Systemic Tissue Atrophy): The progressive depletion of the *Sapta Dhatus* (*Rasa, Rakta, Mamsa, Meda, Asthi, Majja, and Shukra*), leading to inadequate nourishment of the reproductive tissues.

**Abhigata** (Trauma/Iatrogenic Factors): Direct damage to the *Artavavaha Srotas* (such as surgical hysterectomy or pelvic trauma) that can trigger premature ovarian arrest.<sup>(11,25)</sup>

The pathogenesis (*Samprapti*) of *Rajo Nivrutti* is closely tied to the biological timeline of human life.<sup>(2,14)</sup> During *Balyavastha* (childhood), *Kapha Dosha* dominates to support rapid physical growth. In *Madhyamavastha* (adulthood), *Pitta Dosha* dominates to regulate metabolic and reproductive activity, enabling the monthly manifestation of *Artava*. As a woman enters *Jaravastha* (senescence), *Vata Dosha* becomes dominant. This hyperactive *Vata* state diminishes systemic *Agni* (digestive and metabolic fire) and depletes *Kapha*, leading to progressive tissue drying and atrophy (*Dhatu Kshaya*). Because *Artava* is an *Upadhatu* generated directly from *Rasa Dhatu* (plasma), age-related depletion of *Rasa Dhatu* restricts the formation of menstrual fluid, leading to *Artava Kshaya* (reduction and eventual cessation of menstruation).<sup>(7,8,11)</sup>



As shown in Flowchart 1, the transition is initiated by biological stimulants that lead to systemic tissue depletion and channel blockage, manifesting as the eventual cessation of menstrual flow and related post-menopausal complications.<sup>(2,7,8,11)</sup>

**Classification and Dosha–Dushya Involvement:** Classical literature divides *Rajo Nivrutti* into *Kalaja Rajo Nivrutti* (timely, occurring around fifty years of age) and *Akalaja Rajo Nivrutti* (premature or delayed, occurring due to metabolic errors, severe malnutrition,

emotional shock, or surgical trauma).<sup>(7,11)</sup> The *Doshas* predominantly involved are *Vata* (specifically *Vyana Vayu*, which controls systemic circulation, and *Apana Vayu*, which governs menstrual and urinary excretion) and *Pitta* (specifically *Sadhaka Pitta*, which controls emotional status, and *Bhrajaka Pitta*, which regulates body temperature).<sup>(14,25)</sup>

The primary *Dushya* (affected tissues) are *Rasa*, *Rakta*, *Asthi* (bone), *Majja* (nervous tissue), and *Shukra* (reproductive tissue). The *Srotas* (channels) involved are the *Artavavaha Srotas* (the roots of which are the *Garbhashaya* or uterus and the *Artavavahi Dhamanis* or ovarian vessels). Blockages or degeneration (*Srotoshithilata*) in these channels lead to symptoms of *Srotodushti*, such as heaviness of the body, drowsiness (*Tandra*), and body aches (*Angamarda*).<sup>(7,8,14)</sup> The symptoms and classical parameters are organised systematically in Table 2.

**Table 2.** Ayurvedic Conceptual Framework

Clinical Parameter	Vataja Dominance	Pittaja Dominance	Kaphaja Dominance
<b>Primary Symptoms (Lakshana)</b>	Anidra (Insomnia), Kati Shula (Back pain), Parushata (Dryness)	Santapa (Hot flashes), Sveda (Night sweats), Hridrava (Palpitations)	Medovriddhi (Weight gain), Tandra (Drowsiness), Alasya (Lethargy)
<b>Psychological State</b>	Chinta (Anxiety), Bhaya (Fear/Nervousness)	Krodha (Irritability), Shoka (Grief/Mood swings)	Alasya (Apathy), Drowsiness, Cognitive slowing
<b>Tissues Involved (Dushya)</b>	Rasa, Asthi, Majja	Rasa, Rakta	Meda, Kapha
<b>Srotas Affected</b>	Artavavaha Srotas (Atrophy)	Artavavaha, Raktavaha Srotas	Artavavaha, Medovaha Srotas
<b>Complications (Upadrava)</b>	Asthi Saushirya (Osteoporosis)	Cardiovascular vulnerability	Metabolic syndrome, Obesity

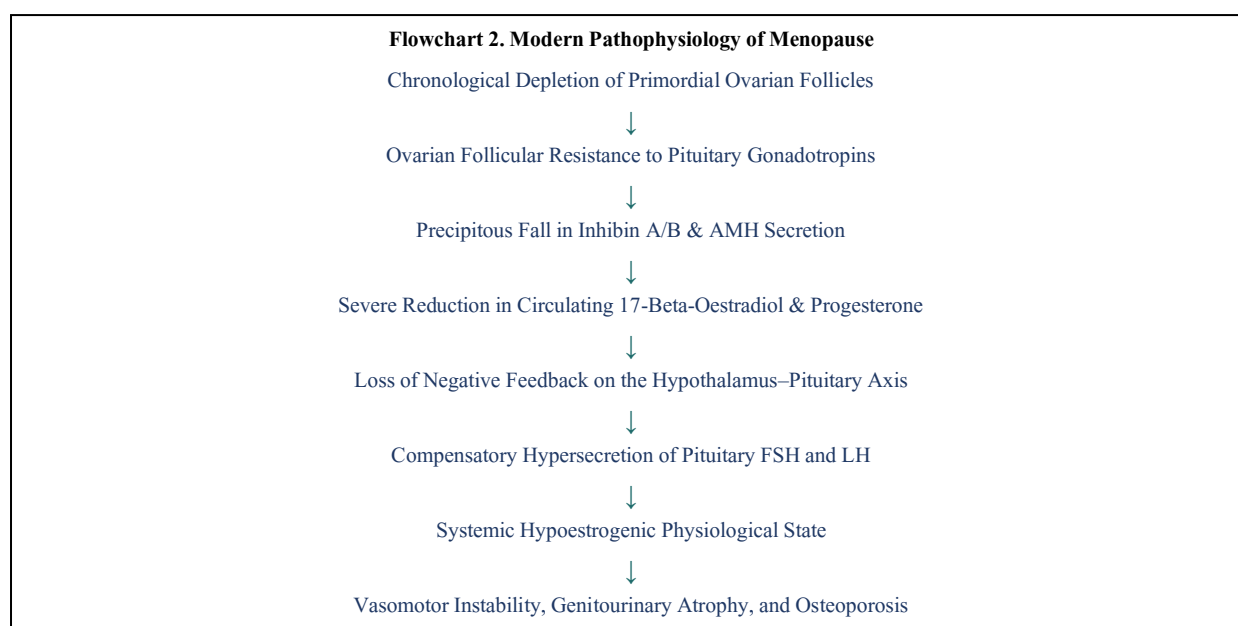
As detailed in Table 2, the clinical presentation of *Rajo Nivrutti* can be classified by *Dosha* dominance, enabling practitioners to design target-specific protocols.<sup>(7,11,14)</sup>

## Review of the Modern Scientific Perspective

**Etiology and Pathophysiology of Ovarian Decline:** From a modern biomedical perspective, menopause is primarily an endocrine transition driven by the depletion of the primordial ovarian follicle pool.<sup>(13)</sup> Throughout perimenopause, remaining follicles exhibit reduced sensitivity to pituitary gonadotropins — specifically Follicle-Stimulating Hormone (FSH) and Luteinising Hormone (LH). This follicular resistance leads to a profound decline in the production of ovarian hormones, particularly 17-beta-oestradiol and progesterone.

The reduction in circulating oestrogen levels disrupts the negative feedback loop on the hypothalamic-pituitary-ovarian (HPO) axis. In an attempt to stimulate the non-responsive ovaries, the anterior pituitary increases gonadotropin secretion, causing a significant rise in serum FSH (typically  $\geq 20$  IU/L, and often exceeding 40 IU/L) and LH levels.<sup>(13,24)</sup> Additionally, circulating levels of inhibin A and B decline, while Anti-Müllerian Hormone (AMH) levels fall below detectable thresholds. Flowchart 2 maps out the modern endocrine pathway and pathophysiological progression of menopause.

This persistent state of hypoestrogenism triggers vasomotor instability (preoptic hypothalamic area resetting, resulting in hot flashes and night sweats), urogenital atrophy (epithelial thinning, loss of elasticity, and alkaline pH shift, presenting as Genitourinary Syndrome of Menopause or GSM), accelerated bone resorption (osteoclasts outperforming osteoblasts), and cardiovascular shifts (endothelial dysfunction and increased atherogenesis risk).<sup>(13,24)</sup>



**Diagnosis and Conventional Management:** The clinical diagnosis of menopause is retrospectively confirmed following twelve consecutive months of amenorrhoea in the absence of other physiological or pathological causes.<sup>(13)</sup> Biochemical validation typically includes serum FSH  $\geq 20$  IU/L (often  $\geq 40$  IU/L), decreased oestradiol, and endometrial thickness  $\leq 5$  mm as measured via transvaginal ultrasonography.

Conventional management consists primarily of Hormone Replacement Therapy (HRT). However, safety concerns highlighted by major clinical studies have associated prolonged HRT with elevated risks of venous thromboembolism, ischaemic stroke, breast cancer, and active gallbladder disease, leading patients and clinicians to seek safer, non-hormonal, plant-based alternatives.<sup>(1,24)</sup> The diagnostic and biological parameters of this modern transition are summarised in Table 3.

**Table 3.** Modern Pathophysiological Parameters of Menopause

Indicator Parameter	Healthy Reproductive Range	Menopausal / Post-menopausal Range	Pathophysiological Significance
<b>Serum FSH</b>	4.7–21.5 IU/L (cycling)	$\geq 20$ IU/L (often $>40$ IU/L)	Indicates loss of follicular negative feedback on the pituitary.
<b>Serum 17-Beta-Oestradiol</b>	30–400 pg/mL (varies by phase)	$< 30$ pg/mL (often lower)	Triggers vasomotor instability, urogenital atrophy, and bone loss.
<b>Endometrial Thickness</b>	4.0–16.0 mm (cycling)	$\leq 5.0$ mm	Essential marker to exclude endometrial hyperplasia or neoplasia.
<b>Vaginal Epithelium pH</b>	3.8–4.5 (acidic)	$> 5.0$ (alkaline)	Loss of lactobacilli leads to thinning, dryness, and recurrent UTIs.
<b>Bone Mineral Density (BMD)</b>	T-score $\geq -1.0$ (normal)	T-score $\leq -2.5$ (Osteoporosis)	Accelerates risk of fragility fractures secondary to osteoclast activation.

As outlined in Table 3, the systemic decline in oestrogen and rise in FSH serve as key diagnostic biomarkers that validate the onset of menopausal syndrome and highlight the clinical need for targeted therapeutic management.<sup>(13,24)</sup>

### **Integrative Perspective: Conceptual Correlation**

**Correlation of Ayurvedic and Modern Concepts:** The conceptual alignment between the two medical frameworks is striking. The age-related decline in ovarian follicles and subsequent hormonal shift correspond directly to *Jaravastha* (chronological senescence) and *Dhatu Kshaya* (systemic tissue depletion) in Ayurveda.<sup>(7,11,25)</sup> Oestrogen deficiency, which causes mucosal thinning and reduced secretions, reflects a state of *Kapha Kshaya* (loss of protective, lubricating fluid properties) and *Vata*-induced *Rukshata* (dryness). Vasomotor symptoms represent a state of *Pitta-Vata* provocation, where the loss of the stabilising, cooling effects of *Kapha* and *Rasa Dhatu* allows *Pitta* to disturb the body's thermoregulatory balance.<sup>(2,14)</sup> Furthermore, Genitourinary Syndrome of Menopause (GSM) is a direct equivalent of *Vataja-Kaphaja Yoni Vyapad* (atrophic vaginal disorders driven by dryness and tissue thinning).<sup>(9,13,23)</sup>

**Mechanistic Explanations of Ayurvedic Herbs:** To bridge these paradigms, modern research has investigated the biological mechanisms of key Ayurvedic herbs. Standardised *Shatavari* (*Asparagus racemosus*) root extract contains active steroidal saponins — specifically Shatavarins I–IV — which act as natural phytoestrogens.<sup>(6,19)</sup> Due to their chemical structure, Shatavarins exhibit direct binding affinity for oestrogen receptors (ER-alpha and ER-beta), serving as plant-derived Selective Oestrogen Receptor Modulators (SERMs). In hypoestrogenic environments, they provide mild oestrogenic stimulation to stabilise vasomotor and mucosal tissues without triggering abnormal endometrial proliferation.<sup>(4,6,12)</sup>

*Ashwagandha* (*Withania somnifera*), on the other hand, contains active withanolides that act as potent adaptogens.<sup>(5,27)</sup> *Ashwagandha* modulates the Hypothalamic-Pituitary-Adrenal (HPA) axis, lowering elevated cortisol levels to reduce stress and anxiety. Additionally, its GABA-mimetic activity stabilises the central nervous system, promotes restful sleep, and supports healthy gonadotropin-releasing hormone (GnRH) secretion, thereby contributing to overall hormonal balance.<sup>(4,5,27)</sup>

## Evidence-Based Analysis of Ayurvedic Interventions

**Clinical Evaluation of Standardised Shatavari Extract:** Recent clinical trials have provided scientific validation for the traditional use of *Shatavari*. In a prospective, randomised, double-blind, placebo-controlled, two-arm, parallel-group trial conducted by Gudise, Dasari, and Kuricheti (2024)<sup>(6)</sup>, 80 perimenopausal and menopausal women (aged 40–55 years) were administered 300 mg of standardised *Shatavari* root extract once daily for 8 weeks (registered under CTRI/2024/09/074239, IEC approved by Dr. D. Y. Patil Medical College & Hospital, Navi Mumbai). The trial reported the following significant findings:

- **Endocrine Modulation:** After eight weeks, the *Shatavari* group exhibited a statistically significant rise in mean serum 17-beta-oestradiol from a baseline of 40.56 to 53.88 pg/mL ( $p = 0.003$ ). Serum FSH also increased from 42.67 to 49.66 IU/mL ( $p = 0.028$ ). Triiodothyronine (T3) levels increased from 133.67 to 141.81 ng/dL ( $p = 0.021$ ), demonstrating a positive thyroid effect. The placebo group remained stable across all parameters.<sup>(6)</sup>
- **Symptom Alleviation:** Menopause Rating Scale (MRS) scores across all three domains (somato-vegetative, psychological, and urogenital) improved significantly ( $p < 0.0001$ ). Hot flashes improved significantly more in the *Shatavari* group compared to the placebo group ( $p = 0.002$ ).<sup>(6)</sup>
- **Psychological Well-Being:** Perceived Stress Scale (PSS-10) scores showed highly significant reductions ( $p < 0.0001$ ). Profile of Mood States (POMS) assessments revealed marked improvements in fatigue ( $p = 0.019$ ) and vigour ( $p = 0.021$ ).<sup>(6)</sup>

A subsequent 8-week, prospective, multicentre, randomised, double-blind, placebo-controlled, three-arm study conducted by **Ademola, Ajgaonkar, Debnath, Debnath, and Langade (2025)**<sup>(4)</sup> — registered under NCT06716554 at ClinicalTrials.gov and conducted at Dr. D. Y. Patil Medical College & Hospital, Navi Mumbai, and the San Francisco Research Institute — evaluated *Shatavari* root extract (SHT, 300 mg/day) as monotherapy and in combination with *Ashwagandha* root extract (ARE-SHT: 250 mg *Ashwagandha* + 300 mg *Shatavari*) versus placebo in 135 postmenopausal women (aged 45–65 years). Both SHT monotherapy and the ARE-SHT combination yielded significant improvements in MRS scores. The combined ARE-SHT group experienced significantly greater overall MRS reductions than SHT monotherapy and placebo at both week four and week eight ( $p <$

**0.0001**). By week eight, both treatment groups achieved significantly greater reductions in hot flash frequency and severity compared to the placebo group (**p = 0.002**), highlighting the synergistic therapeutic value of combining these two Ayurvedic remedies.<sup>(4)</sup>

**Clinical Evaluation of Ashwagandha Root Extract:** The clinical efficacy of *Ashwagandha* root extract (ARE) was demonstrated in a 56-day, prospective, randomised, double-blind, placebo-controlled trial conducted by Gopal et al. (2025)<sup>(5)</sup> (PMC12812913), involving 60 menopausal women (aged 45–55 years) receiving ARE or placebo for 56 days (CTRI/2022/02/040551). The primary outcome was change in total MRS score from baseline to Day 56; secondary outcomes included serum hormonal parameters, hot flash frequency, SF-12 quality-of-life scores, and PSS-10. The trial reported:

- **Hormonal and Quality-of-Life Outcomes:** The ARE group exhibited a statistically significant rise in serum oestradiol (**p < 0.001**) and progesterone (**p < 0.001**) levels, alongside a significant reduction in serum FSH (**p < 0.001**) and LH (**p < 0.001**) levels compared to the placebo group. Total MRS scores reduced significantly (**p < 0.0001**) across somatic, psychological, and urogenital subdomains.<sup>(5)</sup>
- **Dosage Clarification:** The ARE was administered as 300 mg twice daily (total 600 mg/day) of standardised root extract, which corresponds to the dose established in the earlier perimenopause study by the same group.<sup>(5,27)</sup>
- **Vasomotor and Stress Alleviation:** Standardised measures showed a significant decrease in daily hot flash frequency (**p < 0.001**) and PSS-10 scores (**p < 0.001**), alongside a marked increase in general health and quality-of-life scores.<sup>(5)</sup>

**Summary of Ayurvedic Polyherbal and Panchakarma Interventions:** A multicentre, randomised, open-label clinical trial directed by the Central Council for Research in Ayurvedic Sciences (CCRAS), published by Modi, Dei, Harisha, and Shukla (2013)<sup>(15)</sup> (PMC3665193), evaluated the efficacy of a combined Ayurvedic regimen consisting of *Ashokarishta* (ASK, 25 mL BID), *Ashwagandha Churna* (ASW, 3 g BID), and *Praval Pishti* (PP, 250 mg BID) in 52 menopausal women (aged 40–55 years) over three months. The trial reported:

- **Somatic and Vasomotor Relief:** Highly significant (**p < 0.01**) reductions in both MRS and Menopause-Specific Quality of Life (MENQOL) scores. Hot flashes decreased by

409

40.56%, palpitations and heart discomfort decreased by 84.00%, and insomnia decreased by 53.78%.<sup>(15)</sup>

- **Psychological Benefits:** Melancholia, irritability, and anxiety declined significantly, with 17.65% of patients exhibiting moderate improvement and 78.43% showing mild improvement.<sup>(15)</sup>

For urogenital symptoms, an open-labelled, randomised, standard-controlled clinical trial protocol was published by **Thanki and Donga (2026)**<sup>(9)</sup> (CTRI/2025/07/091397; *Int J Clin Trials* 2026;13(1):78–84), evaluating oral *Shatavaryadi Kashaya* (40 mL BID) combined with local vaginal application of *Shatavari Ghrita* ointment (2 g daily) for 60 days versus conventional multivitamins and estriol cream in postmenopausal women with GSM. This protocol was designed to evaluate improvements in the Vaginal Health Index (VHI), Female Sexual Health Index (FSFI), and Vaginal Maturation Index (VMI) via Pap smear.<sup>(9,13)</sup>

Clinical case reports published by **Patel, Donga, Harisha, and Shukla (2019)**<sup>(16)</sup> and corroborated by **Yadav and Dei (2019)**<sup>(17)</sup> have documented the efficacy of *Vayasthapana Gana Ksheerapaka Basti* (medicated milk enemas using age-stabilising herbs described in the *Charaka Samhita*<sup>(14)</sup> — such as *Guduchi*, *Amalaki*, *Jivanti*, and *Shatavari*). In post-menopausal women with severe GSM, pelvic organ prolapse, and back pain, an 8-day course followed by oral administration of the powder (5 g with milk) for two months resulted in significant improvements in pelvic tissue tone, stress urinary incontinence, dysuria, and hot flashes, and helped manage post-menopausal osteoporosis by reducing joint and bone pain.<sup>(16,17,18)</sup> The key clinical studies and trials are summarised in Table 4.

**Table 4.** Clinical Studies Summary (Vancouver-cited)

Author & Year	Study Design	N	Intervention & Dosage	Key Findings & Significance
<b>Gudise VS, Dasari MP, Kuricheti SS (2024)</b> [6]	Prospective, Double-blind, Placebo-controlled RCT	N = 80 (73 completed)	Standardised Shatavari root extract (300 mg/day orally) for 8 weeks (CTRI/2024/09/074239)	Estradiol: 40.56→53.88 pg/mL (p=0.003); FSH: 42.67→49.66 IU/mL (p=0.028). MRS and PSS-10 significantly improved (p<0.0001). T3 improved (p=0.021).

Author & Year	Study Design	N	Intervention & Dosage	Key Findings & Significance
<b>Ademola J, Ajgaonkar A, Debnath T, Debnath K, Langade J (2025)</b> [4]	Three-arm, Double-blind, Placebo-controlled RCT	N = 135	SHT (300 mg/day) alone vs. ARE-SHT (250 mg Ashwagandha + 300 mg Shatavari) vs. Placebo for 8 weeks (NCT06716554)	ARE-SHT superior to SHT monotherapy at weeks 4 and 8 (p<0.0001). Hot flashes reduced vs. placebo (p=0.002). Psychosocial improvements in both groups (p<0.0001).
<b>Gopal S et al. (2025)</b> [5]	Prospective, Double-blind, Placebo-controlled RCT	N = 60	Ashwagandha root extract (ARE, 300 mg BID = 600 mg/day total) for 56 days (CTRI/2022/02/040551)	Total MRS fell significantly (p<0.0001). Oestradiol and progesterone rose; FSH and LH fell (p<0.001). Hot flash frequency and PSS-10 reduced (p<0.001).
<b>Modi M, Dei L, Harisha CR, Shukla VJ (2013)</b> [15]	Multicentre, Randomised Open Clinical Trial	N = 52 (51 completed)	Ashokarishta (25 mL BID) + Ashwagandha Churna (3 g BID) + Praval Pishti (250 mg BID) for 12 weeks	MRS and MENQOL reduced significantly (p<0.01). Hot flashes -40.56%; heart discomfort -84%; insomnia -53.78%.
<b>Thanki AB, Donga S (2026)</b> [9]	Open-labelled, Randomised Standard-controlled Trial Protocol	Protocol (CTRI/2025/07/091397)	Oral Shatavaryadi Kashaya (40 mL BID) + Shatavari Ghrita ointment (2 g/day) for 60 days vs. estriol cream	Designed to evaluate VHI, FSFI, and VMI (Pap smear). Results pending.
<b>Patel JD, Donga S, Harisha CR, Shukla VJ (2019)</b> [16]	Clinical Case Report & Series	N = 1	Vayasthapana Gana Ksheerapaka Basti (8 days) + oral powder (5 g BID with milk) for 2 months	Significant improvement in pelvic organ prolapse, stress urinary incontinence, dysuria, and dyspareunia. Bone pain relief.

As systematically summarised in Table 4, clinical studies evaluated these Ayurvedic interventions across somatic, psychological, and urogenital domains with substantial efficacy. Superscripted Vancouver citation numbers identify each study.

### Integrative Therapeutic Approaches

**Table 5.** Integrative Therapeutic Approaches for Menopausal Symptom Clusters

Menopausal Symptom Cluster	Diagnostic Ayurvedic State	Targeted Interventions	Clinical Mechanism of Action
<b>Vasomotor Symptoms (Hot flashes, night sweats, palpitations)</b>	Aggravated Pitta and Sadhaka Pitta with Rasa Kshaya	Shatavari Churna (3–6 g BID with warm milk) or standardised extract (300 mg/day)[6]; Virechana with Avipattikar Churna (10 g at bedtime)[15]	Oestrogenic saponins bind ER-alpha/ER-beta, stabilising hypothalamic thermoregulation and reducing hot flash frequency.[4,6]
<b>Psychological &amp; Insomnia Symptoms (Anxiety, worry, poor sleep)</b>	Aggravated Vata and Prana Vayu with Ojas Kshaya	Ashwagandha Churna (3 g BID) or extract (300 mg BID = 600 mg/day)[5]; Shirodhara with Bala Taila[21]; Padabhyanga (foot massage)[21]	Cortisol reduction via HPA axis modulation; GABA-mimetic activity calms CNS and improves sleep architecture.[5,27]
<b>Genitourinary Symptoms (Vaginal dryness, dyspareunia, recurrent UTIs)</b>	Vataja and Kaphaja Yoni Vyapad with tissue thinning	Vaginal Shatavari Ghrita ointment (2 g daily)[9]; Yoni Pichu soaked in Bala Taila[23]; oral Shatavaryadi Kashaya (40 mL BID)[9]	Local oestrogenic saponins stimulate vaginal epithelial maturation, restore lubrication, lower vaginal pH, and improve tissue elasticity.[9,13,23]
<b>Osteoporotic &amp; Joint Pain (Low back pain, arthralgia)</b>	Asthi Kshaya and Sandhigata Vata	Praval Pishti (250 mg BID with milk)[15]; Matra Basti with Ashwagandha Taila (60 mL/day for 7–8 days)[20]; Abhyanga with Mahanarayana Taila[19]	Bioavailable calcium carbonate from Praval supports bone mineralisation; warm oil therapies pacify Vata, reducing joint pain and stiffness.[15,20]

As shown in Table 5, the pharmacological actions of selected herbs and therapies contribute synergistically to managing menopausal symptoms by addressing both Ayurvedic

imbalances and modern pathophysiological changes. All interventions are cited to primary source studies using Vancouver superscripts.

## Discussion

The results of this review highlight the therapeutic potential of Ayurvedic interventions as safe and comprehensive alternatives to conventional HRT. Standardised extracts of *Shatavari* (*Asparagus racemosus*) and *Ashwagandha* (*Withania somnifera*) have been shown to modulate the HPO axis and endocrine system, promoting hormonal balance, improving mood and sleep, and reducing perceived stress in post-menopausal women.<sup>(4-6,15)</sup>

The clinical findings discussed in this review reveal areas of agreement and divergence. Standardised herbal extracts — such as KSM-66 or formulations standardised to Shatavarins  $\geq 10\%$  — show consistent, statistically significant improvements in vasomotor symptoms and perceived stress across multiple RCTs.<sup>(4-6)</sup> In contrast, generic dietary phytoestrogens such as soy isoflavones demonstrate mixed results in broader literature, showing moderate efficacy in reducing vaginal dryness but limited impact on dyspareunia.<sup>(24)</sup> This discrepancy suggests that multi-component, adaptogenic Ayurvedic formulations may provide more comprehensive relief than single-nutrient dietary phytoestrogen isolates.<sup>(4,5,24)</sup>

Furthermore, the strength of evidence varies depending on the type of Ayurvedic therapy. High-quality, double-blind RCTs provide strong evidence for the adaptogenic and phytoestrogenic effects of standardised *Shatavari* and *Ashwagandha* root extracts.<sup>(4-6)</sup> However, complex *Panchakarma* and *Basti* regimens are currently supported primarily by smaller open-label trials and case series.<sup>(16,17,18)</sup> While these show significant clinical improvements in structural and local symptoms, further validation through larger, well-designed RCTs is needed.

It has also been observed that other phytotherapeutic agents such as *Tribulus terrestris*, saffron, and ginger may offer complementary benefits in managing menopausal symptoms, though the evidence base is less robust than that for standardised *Shatavari* and *Ashwagandha* extracts.<sup>(22,26)</sup> Integrative behavioural approaches, including adjunct Ayurvedic external therapies such as *Siro-pichu* and *Padabhyanga* combined with Cognitive Behavioural Therapy for Insomnia, have also shown early promise.<sup>(21)</sup>

Several key research gaps must be addressed:

- **Short Study Durations:** Most clinical trials span only 8–12 weeks. Longer-term studies (12–24 months) are needed to evaluate effects on bone density (DEXA) and cardiovascular health.<sup>(20,24)</sup>

- **Standardisation of Formulations:** Consistent standardisation of active phytoconstituents across different preparations is required to ensure reproducible clinical outcomes.<sup>(6,19)</sup>
- **Integration of Diagnostic Staging:** Developing standardised protocols that combine Ayurvedic diagnostic principles (*Prakriti* and *Dosha-Dushya* analysis) with modern laboratory markers (FSH, LH, and oestradiol) will enable more personalised and effective integrative care.<sup>(7,13,25)</sup>

## Conclusion

This review demonstrates that *Rajo Nivrutti* is a natural senescent transition characterised by *Vata* predominance and tissue depletion (*Dhatu Kshaya*). Scientific evidence from recent clinical trials indicates that standardised extracts of *Shatavari* and *Ashwagandha*, as well as targeted therapies such as *Basti*, are safe and effective non-hormonal options for managing menopausal symptoms. By addressing underlying tissue depletion and autonomic imbalance, these traditional Ayurvedic interventions can significantly improve quality of life in menopausal women, offering a valuable and safer alternative to conventional Hormone Replacement Therapy.

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