

# Shatavaryadi and Bruhat-Shatavaryadi Ghruta: An Analytical Review of Classical Ayurvedic Formulations for Pitta-Dominant Disorders and Their Potential Mechanisms of Action

**Dr. Shreenidhi Kalmath**

Assistant Professor, Department of Ayurveda Samhita Siddhanta and Sanskrit,  
Rashmi Institute of Ayurveda Medical Sciences and Research Centre, Kudligi, Karnataka, India

## ABSTRACT

**Background:** Shatavaryadi Ghruta and Bruhat-Shatavaryadi Ghruta are classical Ayurvedic ghruta-based formulations prominently indicated in Raktapitta, Amlapitta, Yonivyapad and other pitta-dominant disorders, with Shatavari (*Asparagus racemosus* Willd.) and Jeevaniya-gana dravyas as major ingredients. Classical descriptions are scattered across Charaka Samhita, Chakradatta, Sahasrayoga and Bhaishajya Ratnavali and have not been systematically compiled in relation to contemporary pharmacological data.

**Objective:** To present a comprehensive literary review of Shatavaryadi and Bruhat-Shatavaryadi Ghruta and to discuss their probable mode of action by correlating classical Ayurvedic concepts with modern pharmacological and clinical evidence on Shatavari.

**Methods:** Classical references were collected from Brihatrayi and Laghutrayi texts and Nighantu literature, focusing on Raktapitta, Amlapitta, Yonivyapad and related adhikaras. Experimental and clinical studies on *Asparagus racemosus* were identified from databases such as PubMed and Google Scholar using relevant keywords and were narratively synthesised. Key pharmacological actions were mapped to classical indications.

**Results:** Shatavaryadi Ghruta (Charaka Chikitsa 4) and Bruhat-Shatavaryadi Ghruta (Charaka Chikitsa 30) are multi-component

ghruta-kalpanas prepared with Shatavari, Jeevaniya-gana and allied dravyas in ghruta and ksheera media, indicated for haemorrhagic, gastrointestinal, reproductive, neuro-psychiatric and systemic rasayana indications. Modern studies demonstrate significant antiulcer, antisecretory, immunomodulatory, antioxidant, galactagogue, neuroprotective and adaptogenic effects of Shatavari, supporting its classical rasayana, balya and pittashamana roles.<sup>1,2,3,4,5</sup>

**Conclusion:** Classical descriptions and contemporary pharmacological data together suggest that Shatavaryadi-kalpanas may exert multi-target effects including pitta-rakta modulation, mucosal protection, immune regulation and tissue resilience. However, controlled clinical trials on the complete formulations are limited. Future work should focus on standardisation and clinical evaluation of Shatavaryadi and Bruhat-Shatavaryadi Ghruta in selected pitta-dominant conditions.

**KEYWORDS:** Shatavari; Shatavaryadi Ghruta; Bruhat-Shatavaryadi Ghruta; Jeevaniya-gana; Raktapitta; Amlapitta; ghruta-kalpana; Ayurveda pharmacology.

## INTRODUCTION

Ghruta-based formulations hold a significant position in Ayurvedic therapeutics, especially for conditions predominated by pitta such as Raktapitta, Amlapitta, and various psychosomatic disorders. Among these, Shatavaryadi Ghruta and Bruhat-Shatavaryadi Ghruta

are well-described multi-ingredient preparations where Shatavari (*Asparagus racemosus* Willd.) and Jeevaniya-gana dravyas form the core, processed with ghruta and ksheera.

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Classical texts classify Shatavari under Balya, Shukrajanana, Prajasthapana and Pittaghna groups, and Nighantus highlight its rasayana, balya, medhya and pittashamana actions with indications in Raktapitta, Amlapitta, shwasa, santapa, ksata-ksheya and reproductive health. Modern pharmacological work on *Asparagus racemosus* reports antiulcer, antisecretory, immunomodulatory, antioxidant, galactagogue, neuroprotective and adaptogenic properties, offering an opportunity to re-examine Shatavaryadi-kalpanas using contemporary scientific frameworks.<sup>1,4,2,3,5</sup>

Despite this, there is limited literature that systematically compiles the classical formulations of Shatavaryadi and Bruhat-Shatavaryadi Ghruta alongside modern evidence on Shatavari. This review therefore aims to bridge classical textual descriptions with pharmacological data and propose a probable mode of action for these formulations.

## Materials and Methods

### Classical literary review

Classical data were collected from Brihatrayi texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya) and Laghutrayi (Chakradatta, Bhaishajya Ratnavali, Sahasrayoga), with focus on Raktapitta, Amlapitta, Yonivyapad and Vatarakta adhikaras. Verses describing Shatavaryadi Ghruta, Bruhat-Shatavaryadi Ghruta, Shatavari-ghruta variants and related formulations were identified and compiled along with information on ingredients, dravya-samyoga, sneha, drava dravya, method of preparation and indications.

Nighantu literature, particularly Bhavaprakasha (Guduchyadi-varga), was reviewed to extract detailed guna-karma descriptions of Shatavari and Mahashatavari, and to contextualise their rasayana and pittashamana roles.

### Modern pharmacological data

Experimental and clinical studies on *Asparagus racemosus* were identified through PubMed and Google Scholar searches using keywords "Asparagus racemosus", "Shatavari", "antiulcer", "immunomodulatory", "antioxidant", "galactagogue", "neuroprotective" and "adaptogenic".<sup>4</sup> Key articles were selected based on relevance to classical indications of Shatavaryadi-kalpanas, including antiulcer activity in rat models, immunomodulatory effects on Th1/Th2 balance, galactagogue activity in lactating mothers and comprehensive phytochemical/pharmacological reviews.<sup>1,2,3,4,5</sup> Data were narratively synthesised and mapped to classical indication groups.

## Results

### Classical description of Shatavari

Charaka classifies Shatavari within Balya, Shukrajanana and Prajasthapana groups, emphasising its role in nourishment, reproductive health and maintenance of progeny. Sushruta places Shatavari in Vidarigandhadi-gana and Kantakapanchamoola, while Vagbhata includes it under Pittaghna-gana, indicating its pitta-modulating actions.

Bhavaprakasha describes Shatavari as guru, sheeta, tikta-madhura, snigdha and rasayana, with medhya and agni-pushtikara qualities; it is indicated in gulma, atisara, vatarakta, shwasa, raktapitta and stanya-kshaya, and noted as shukra-stanya-kari and balya. Mahashatavari is additionally described as medhya, hridya, vrisya and rasayana, useful in arsha, grahani, netra-roga and vatarakta, suggesting a wider systemic profile.

### Shatavaryadi Ghruta (Charaka Chikitsa 4, Raktapitta adhikara)

In Charaka Samhita, Shatavaryadi Ghruta is prescribed in Raktapitta adhikara. The formulation is prepared using kalka of Shatavari, Dadima, Tintidika, Kakoli, Meda-Mahameda, Madhuka, Vidari and Phalapuraka-moola, with ghruta as sneha and ksheera (four times the quantity) as drava dravya. It is indicated for kasa, jwara, anaha, vibandha, shula and various presentations of Raktapitta, highlighting its use in upper gastrointestinal and haemorrhagic conditions.

### Bruhat-Shatavaryadi Ghruta (Charaka Chikitsa 30, Yonivyapad adhikara)

Bruhat-Shatavaryadi Ghruta is described in Yonivyapad chikitsa for pitta-la yoninas. Shatavari moola swarasa (four tula) is used as primary dravya; kalka comprises Jeevaniya-gana, Shatavari, Draksha, Parushaka, Priyala (one karsha each) and Yashtimadhuka (two karsha). Ghruta (one adhaka) and ksheera (four tula) form the sneha and drava; after siddhi, madhu (eight pala), Pippali-churna (eight pala) and Sharkara (ten pala) are added.

The text attributes to Bruhat-Shatavaryadi Ghruta benefits in yonysruk, yonidosha, shukra-dosha, vrisya and pumsavana, and in ksata-ksheya, Raktapitta, kasa, shwasa, hlimaka, kamala, vatarakta, visarpa, hrd-roga-graha, unmada, arati and apasmara, indicating a broad rasayana and vatarakta-hara profile spanning reproductive, haemorrhagic and neuro-psychiatric conditions.

Detailed composition of classical Shatavari-ghruta formulations and Bruhat-Shatavaryadi Ghruta are summarised in Table 1 and Table 2 respectively.

**Table 1. Classical formulations of Shatavaryadi and Shatavari-ghruta as described in Ayurvedic texts**

| Text / Grantha                 | Formulation name                       | Adhikara / Context                      | Key ingredients (Kalka / main dravya)                                                                                                                  | Drava dravya                                         | Sneha / base                                       | Major indications                                                            |
|--------------------------------|----------------------------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------|
| Charaka Samhita                | Shatavaryadi Ghruta                    | Chikitsa Sthana 4 – Raktapitta          | Shatavari, Dadima, Tintidika, Kakoli, Meda–Mahameda, Madhuka, Vidari, Phalapuraka moola                                                                | Ksheera – 4 parts (ksheera chaturguna)               | Murchita ghruta                                    | Kasa, jwara, anaha, vibandha, shula, various forms of raktapitta             |
| Sahasrayoga (Ghruta prakarana) | Shatavari-ghruta (variant)             | Mootrakricchra / Mootradosha context    | Shatavari svarasa; Vidaari, Chandana, Tugaa, Mrudvika, Madhuyashti; Kasheruka, Vaaru-beeja, Trutyadrija, Kanotpala, Padma-patra, Musta, Kakolyadi-gana | Ksheera (dwi-guna to ghruta)                         | Ghruta, later mixed with madhu and sharkara churna | Mootrakricchra, mootra-dosha, disorders related to sharkara / urinary system |
| Chakradatta                    | Shatavari ghruta; Mahashatavari ghruta | Raktapitta adhikara; Vatarakta adhikara | Shatavari moola / Mahashatavari moola as kalka with pittaghna dravya as per respective yoga                                                            | Ksheera and jala as per yoga                         | Ghruta                                             | Raktapitta, vatarakta, related pitta-rakta vikaras                           |
| Bhaishajya Ratnavali           | Shatavari ghruta                       | Amlapitta adhikara (sloka 41-42)        | Shatavari moola kalka - 64 tola                                                                                                                        | Paya (jala) - 128 tola; Ksheera - 1 adhaka (4 parts) | Ghruta - 128 tola                                  | Amlapitta, vatapittaja roga, raktapitta, trusha, murcha, shwasa, santapa     |

**Table 2. Bruhat-Shatavaryadi Ghruta – composition, method of preparation and classical indications**

| Parameter                                    | Description                                                                                                                                                                                       |
|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Text / reference                             | Charaka Samhita, Chikitsa Sthana 30 – Yonivyapad chikitsa (pittala yoninam)                                                                                                                       |
| Main formulation name                        | Bruhat-Shatavaryadi Ghruta                                                                                                                                                                        |
| Primary dravya (swarasa)                     | Shatavari moola – 4 tula (pressed to obtain svarasa)                                                                                                                                              |
| Kalka dravya                                 | Jeevaniya-gana; Shatavari; Draksha; Parushaka; Priyala – 1 karsha each; Yashtimadhuka – 2 karsha                                                                                                  |
| Drava dravya                                 | Ksheera – 4 tula                                                                                                                                                                                  |
| Sneha                                        | Ghruta – 1 adhaka                                                                                                                                                                                 |
| Additional dravya (after siddhi)             | Madhu – 8 pala                                                                                                                                                                                    |
| Prakshepaka dravya                           | Pippali churna – 8 pala; Sharkara – 10 pala                                                                                                                                                       |
| Dose                                         | 1 karsha (as per text)                                                                                                                                                                            |
| Method of preparation (summary)              | Ghruta cooked with Shatavari moola svarasa, ksheera and kalka of Jeevaniya-gana + other dravyas on manda-agni until ghruta siddhi, then cooled and mixed with madhu, pippali churna and sharkara. |
| Classical indications – reproductive / gynae | Yonysruk and yonidosha; shukra-dosha; vrisya and pumsavana (promoting fertility and healthy conception)                                                                                           |
| Classical indications – rasayana / systemic  | Ksata-ksheya; Raktapitta; kasa; shwasa; hrd-roga; kamala; vatarakta; visarpa; hrcchiro-graha; unmada; arati; apasmara (vata-pitta-atmak conditions)                                               |
| Overall action profile                       | Rasayana, balya, pittashamana, vatarakta-hara, medhya, hridya and systemic ghruta-kalpna suitable for pitta-dominant yonivyapad and multi-system disorders                                        |

**Other Shatavari-ghruta formulations**

Sahasrayoga (Ghruta-prakarana) describes a Shatavari-ghruta variant prepared from Shatavari svarasa with Vidaari, Chandana, Tugaa, Mrudvika, Madhuyashti, Kasheruka, Vaaru-beeja, Trutyadri-ja, Kanotpala, Padma-

patra, Musta and Kakolyadi-gana, cooked in ghruta and ksheera, later mixed with madhu and sharkara. This formulation is principally indicated in mootrakricchra and mootra-dosha, reflecting urinary tract applications.

Bhaishajya Ratnavali (Amlapitta adhikara) describes Shatavari-ghruta prepared from Shatavari-moola-kalka (64 tola), ghruta (128 tola), paya (jala, 128 tola) and ksheera (one adhaka), indicated in Amlapitta, vatapittaja-roga, Raktapitta, trusha, murcha, shwasa and santapa.

### Pharmacological evidence on *Asparagus racemosus*

#### Antiulcer and gastro-protective actions

Bhatnagar and Sisodia reported that methanolic extract of *Asparagus racemosus* roots (100 mg/kg, oral) significantly reduced ulcer index, gastric volume, free acidity and total acidity in indomethacin plus pyloric ligation-induced gastric ulcers in rats; the effect was comparable to ranitidine.<sup>1</sup> Treatment increased total carbohydrate and the TC/TP ratio of gastric juice, suggesting enhanced mucosal protection.<sup>1</sup> These findings support classical indications of Shatavari in Amlapitta and Raktapitta-like conditions.

Comprehensive reviews also note clinical and preclinical evidence for duodenal ulcer healing, improved gastric mucosal resistance and modulation of gastric emptying, which align with Shatavari's traditional use in parinama-shula and dyspepsia.<sup>4</sup>

#### Immunomodulatory and immunoadjuvant activity

Gautam et al. studied a standardised aqueous extract of *Asparagus racemosus* roots (ARE) and demonstrated significant increases in CD3+ and CD4/CD8+ T-cell percentages in SRBC-sensitised animals.<sup>2</sup> ARE up-regulated Th1 cytokines (IL-2, IFN-gamma) and Th2 cytokine IL-4, enhanced antibody titres and DTH responses, and supported lymphocyte proliferation, indicating mixed Th1/Th2 immunoadjuvant activity.<sup>2</sup>

Additional work has shown protection against experimentally induced abdominal sepsis via leucocytosis, enhanced phagocytic activity and reduced mortality, suggesting immunomodulatory rasayana potential congruent with classical santapa, shwasa and ksata-ksheya indications.<sup>4</sup>

#### Antioxidant and anti-inflammatory effects

Modern reviews highlight robust antioxidant and anti-inflammatory activities of *Asparagus racemosus*, with pleiotropic effects including neuroprotective, hepatoprotective and anti-diabetic actions.<sup>4,5</sup> Crude extracts and polysaccharide-rich fractions have demonstrated inhibition of lipid peroxidation and protein oxidation in gamma radiation-induced oxidative stress models, supporting rasayana and tissue-protective roles.<sup>4</sup>

#### Galactagogue (lactation-promoting) activity

A double-blind randomised clinical trial in lactating mothers found that oral administration of *Asparagus racemosus* preparation led to more than three-fold increase in prolactin levels compared to control, with significant improvements in maternal and infant outcomes.<sup>3</sup> Secondary parameters such as mothers' and babies' weight and subjective satisfaction corroborated the primary findings, confirming Shatavari's galactagogue effect described in Ayurvedic literature.<sup>3</sup>

#### Neuroprotective, nootropic and antidepressant potential

Recent review articles summarise experimental evidence for neuroprotective, nootropic and antidepressant effects of *Asparagus racemosus*, including improved memory, protection against neurodegeneration and modulation of serotonergic and noradrenergic systems.<sup>5</sup> These observations resonate with classical indications of Bruhat-Shatavaryadi Ghruta in unmada, apasmara, arati and hrd-roga-graha, where medhya and hridya actions are emphasised.

Selected experimental and clinical studies on Shatavari and their relevance to classical indications are summarised in Table 3.

**Table 3. Selected pharmacological and clinical studies on *Asparagus racemosus* (Shatavari) and their relevance to classical indications of Shatavaryadi-kalpanas**

| Pharmacological / clinical effect        | Study type & key findings                                                                                                                         | Source                                        | Ref | Classical indication(s) supported                      |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----|--------------------------------------------------------|
| Antiulcer and gastro-protective activity | Methanolic root extract (100 mg/kg) reduced ulcer index, gastric volume, acidity; comparable to ranitidine; increased gastric mucus (TC/TP ratio) | Bhatnagar & Sisodia, J Herb Pharmacother 2006 | 1   | Amlapitta; Raktapitta; kasa-jwara with UGI involvement |

|                                                      |                                                                                                                                                                   |                                      |     |                                                                           |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----|---------------------------------------------------------------------------|
| Immunomodulatory (Th1/Th2) and adjuvant activity     | Aqueous root extract increased CD3+/CD4/CD8+ T-cells; up-regulated Th1 (IL-2, IFN- $\gamma$ ) and Th2 (IL-4) cytokines; enhanced antibody titres and DTH response | Gautam et al., J Ethnopharmacol 2009 | 2   | Rasayana, balya, santapa, shwasa, ksata-ksheya                            |
| Antioxidant and anti-inflammatory actions            | Reviews report strong antioxidant potential and anti-inflammatory effects; pleiotropic activity including neuroprotective and hepatoprotective actions            | Alok et al. 2013; Meher et al. 2024  | 4.5 | Raktapitta, vatarakta, hrd-roga, visarpa, systemic rasayana               |
| Galactagogue (lactation-promoting) effect            | Double-blind RCT: >3-fold increase in prolactin vs control; significant improvement in maternal/infant outcomes                                                   | Gupta & Shaw, Iran J Pharm Res 2011  | 3   | Prajasthapana, stanya-janana, women's health                              |
| Neuroprotective, nootropic, antidepressant potential | Reviews summarise evidence for neuroprotective, nootropic and antidepressant effects; improved memory, neurodegeneration protection                               | Meher et al., J Appl Pharm Res 2024  | 5   | Unmada, apasmara, arati, hrcchirograha                                    |
| General rasayana and multi-system benefits           | Comprehensive reviews indicate tonic, diuretic, adaptogenic, hepatoprotective and anti-infective properties                                                       | Alok et al. 2013; Goyal et al. 2003  | 4.6 | Broad rasayana, balya, ksata-ksheya, kamala, liver / systemic indications |

## Discussion

This review shows that Shatavaryadi and Bruhat-Shatavaryadi Ghruta are complex ghruta-kalpanas designed to address pitta-dominant and multi-system disorders through the synergistic actions of Shatavari, Jeevaniya-gana and other dravyas processed in ghruta and ksheera. The sheeta, snigdha and madhura properties of these ingredients, combined with the lipophilic carrier ghruta, suggest mechanisms involving pitta-rakta pacification, mucosal protection and enhancement of dhatu-bala.

The antiulcer and antisecretory activity of *Asparagus racemosus* root extract, comparable to ranitidine, provides a modern explanation for classical use in Amlapitta, Raktapitta and parinama-shula, particularly where Shatavaryadi and Shatavari-ghruta are indicated.<sup>1</sup> Increased mucosal carbohydrates and TC/TP ratios correlate with strengthened mucosal resistance, aligning with the concept of rasayana-mediated tissue protection.

Immunomodulatory and immunoadjuvant effects of Shatavari, including balanced Th1/Th2 activation and enhanced antibody responses, support its rasayana, balya and santapa-shamana roles and the wide systemic indications of Bruhat-Shatavaryadi Ghruta in vatarakta, visarpa, hrd-roga and sepsis-like conditions.<sup>2,4</sup> Antioxidant and anti-inflammatory actions further reinforce its suitability in oxidative stress-related disorders and degenerative conditions.

The galactagogue effect demonstrated in controlled trials substantiates Prajasthapana and stanya-janana indications and reinforces the relevance of Shatavari-based formulations in puerperal care and women's health.<sup>3</sup> Neuroprotective and antidepressant activities of *Asparagus racemosus*, including modulation of serotonergic and noradrenergic pathways, offer plausible mechanisms for classical indications in unmada, apasmara and arati, where Bruhat-Shatavaryadi Ghruta is recommended.<sup>5</sup>

Taken together, these findings suggest that Shatavaryadi-kalpanas may act through multiple mechanisms: modulation of gastric secretions and mucosal integrity; regulation of immune responses and oxidative stress; support of neuroendocrine balance; and enhancement of reproductive and lactational functions. The presence of ghruta and ksheera likely enhances bioavailability and tissue penetration of key phytoconstituents such as steroidal saponins (Shatavarins), immunoside and polysaccharides.<sup>4,5</sup>

However, most modern studies focus on isolated Shatavari extracts rather than the complete ghruta formulations described in Ayurveda. There is a need for standardisation studies, quality control parameters and controlled clinical trials specifically on Shatavaryadi Ghruta and Bruhat-Shatavaryadi Ghruta in selected indications such as Amlapitta, functional dyspepsia, haemorrhagic disorders, vatarakta and pitta-dominant gynaecological conditions.

## Conclusion

Shatavaryadi and Bruhat-Shatavaryadi Ghruta, as described in classical Ayurvedic texts, represent multi-target ghruta-kalpanas with strong rasayana, balya, pittashamana and vatarakta-hara profiles applied across gastrointestinal, haemorrhagic, reproductive and neuro-psychiatric disorders. Modern pharmacological and clinical evidence on *Asparagus racemosus* supports many of these traditional claims, particularly in the domains of ulcer healing, immunomodulation, antioxidant defence, neuroprotection and galactagogue activity.<sup>1,2,3,4,5</sup>

The convergence between classical indications and contemporary data justifies further systematic clinical evaluation of Shatavaryadi and Bruhat-Shatavaryadi Ghruta. Future research should focus on standardisation, safety profiling and pilot randomised controlled trials, thereby contributing to evidence-based integration of these formulations in the management of pitta-dominant conditions.

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