



**INFERTILITY THROUGH THE LENS OF ĀCĀRYA CHARAKA: CLASSICAL  
CONCEPTS AND MODERN CHALLENGES**

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**ABSTRACT**

**Background:** Infertility, classically discussed as *vandhyatva*, is a major public-health issue with substantial psychosocial and economic impact. Contemporary estimates suggest that ~1 in 6 people experience infertility during their lifetime, underscoring the need for accessible, evidence-based and culturally congruent care. **Aim:** To synthesize Acharya Charaka's classical framework—especially *Garbha-sambhava-samagri* (Ritu, Kṣetra, Ambu, Bīja)—with current reproductive science, and to outline integrative evaluation and management pathways for modern clinical practice. **Methods:** Narrative review of primary Ayurvedic sources and recent international guidance on infertility definitions, prevalence and male–female factor contributions. **Conclusions:** Acharya Charaka's four-pillar conception model maps coherently onto modern determinants of fertility (timing/ovulation, uterine–tubal milieu, metabolic–endocrine–nutritional status, and gamete quality). This alignment supports pragmatic, patient-centred pathways that combine lifestyle (*dinacharya/ṛtucaryā*), *rasāyana/vājīkaraṇa*, judicious *pañcakarma*, and evidence-based diagnostics/therapies, including referral for ART when indicated.

**KEYWORDS:** *Vandhyatva*, *Garbha-sambhava-samagri*, integrative medicine, Ayurveda, ART.

**1. INTRODUCTION**

Infertility is commonly defined as failure to achieve a clinical pregnancy after ≥12 months of regular, unprotected intercourse (earlier evaluation is appropriate for advanced maternal age or clear risk factors). Global estimates indicate about 17.5% lifetime prevalence, with significant unmet need for affordable, quality care. Male factors are present in ~50% of couples (sole cause in ~20%); hence, evaluation of both partners is essential.

Classical Ayurvedic literature, notably the *Charaka Saṃhitā*, discusses fertility comprehensively under *garbha* (embryo/fetus), *vandhyatva* (infertility) and allied topics. Central is the doctrine of *Garbha-sambhava-samagri*—the necessary elements for conception: **Ritu** (timely/ fertile period), **Kṣetra** (reproductive field, chiefly uterus and passages), **Ambu** (nutritive/Āhāra-rasa & systemic homeostasis), and **Bīja** (gametes: *śukra* and *ārtava*).

**2. CLASSICAL CONCEPTS IN CHARAKA**

**2.1 Garbha-sambhava-samagri**

- **Ritu (Time):** Alignment with the fertile window and age-appropriate reproduction; derangements include *ritu-vaiguṇya* (improper timing). Clinical

correlation: ovulatory disorders, anovulation, luteal defects, delayed childbearing.

- **Kṣetra (Field):** Integrity of *yonī-mārga* (vagina–cervix–uterus–tubes) and *garbhāśaya*; clinical correlation: uterine/tubal factor, endometrial receptivity.
- **Ambu (Waters/Nutrition):** Quality of *āhāra-rasa*, *ojas*, endocrine–metabolic balance; clinical correlation: BMI extremes, insulin resistance/PCOS, thyroid disease, micronutrient deficits, systemic inflammation.
- **Bīja (Seed):** Purity, quantity and strength of *śukra* and *ārtava*; clinical correlation: semen parameters, oocyte quality, ovarian reserve.

**2.2 Doṣa, Dhātu, Agni and Srotas**

Charaka links reproductive health to balanced *doṣa* (especially *apāna vāta*), robust *agni*, and patency of *ārtavavaha* and *śukravaha srotas*. Aggravating factors include incompatible diet/lifestyle, stress, toxins, and *vyāyāma ati-yoga/abhyavahāra doṣa*.

### 2.3 Related Regimens

- **Preconception:** *Garbha-dāna saṃskāra, ṛtumatī-charyā, vājīkaraṇa/rasāyana*, and counselling on *āhāra-vihāra*.
- **Antenatal:** *Garbhini paricharyā* for metabolic-emotional balance and fetal well-being.

### 3. MODERN EVIDENCE: Definitions, Magnitude and Factor Contributions

- **Definition & timing for evaluation:** Start investigations after 12 months (earlier at  $\geq 35$  years or when risk factors are obvious).

### 4. MAPPING CHARAKA'S FRAMEWORK TO CONTEMPORARY EVALUATION

Acharya Charaka construct	Modern correlate	Practical evaluation
Ritu	Ovulatory timing, ovarian reserve, age	Cycle charting, mid-luteal progesterone/ultrasound, AMH/AFC; preconception age counselling
Kṣetra	Uterine cavity, cervix, tubal patency, endometrium	Pelvic exam, TVS, saline sonography/HSG, hysteroscopy when indicated
Ambu	Nutrition, metabolic-endocrine milieu, inflammatory status	BMI, diet quality, HbA1c/OGTT (PCOS), thyroid profile, Vitamin D/B12, lifestyle assessment
Bīja	Gamete quantity/quality	WHO semen analysis; consideration of DNA fragmentation; ovarian reserve, response predictions

(Modern evaluation guidance summarized from ESHRE and ASRM/AUA documents.)

### 5. INTEGRATIVE MANAGEMENT PATHWAY (CHARAKA-INFORMED, EVIDENCE-ALIGNED)

#### 5.1 Lifestyle & Behaviour (*Āhāra-Vihāra*)

- **Weight optimization, diet quality, physical activity, sleep hygiene, stress reduction:** improves ovulatory function and semen quality; aligns with *ambuposhana* and *agni-saṃśamana*.

#### 5.2 Rasāyana/Vājīkaraṇa Support

Classical emphasis on *ojas*-building and *śukra/ārtava* nourishment (e.g., *ghṛta*, milk-based *kṣīra-kalpanā*, selected *rasāyana* and *vājīkaraṇa* dravyas) individualized to *doṣa* and comorbidities, with safety monitoring.

#### 5.3 Pañcakarma (select cases)

*Basti* (especially *uttara-basti* under strict asepsis and indications), gentle *snehana-svedana* for *vāta*-dominant states; reserve invasive procedures to trained settings and integrate with modern diagnostics.

#### 5.4 Condition-specific measures

- **Ovulatory dysfunction/PCOS (Ambu-Ritu):** weight loss if overweight, insulin-sensitizing diet/behaviour; modern ovulation induction as needed.
- **Tubal/uterine factor (Kṣetra):** address infection, adhesions, polyps, fibroids; consider hysteroscopic correction and tubal assessment early when risk factors exist.
- **Male factor (Bīja):** correct varicocele in select men; lifestyle, treat infection/hypogonadism appropriately; refer early for ICSI when severe.

- **Prevalence:** WHO estimates ~17.5% lifetime infertility globally (1990–2021 synthesis).
- **Male contribution:** Male factor involved in approximately half of couples.

#### 5.5 Assisted Reproductive Technology (ART)

Use graded escalation (*samprāpti-vighātana* principle applied pragmatically): timed intercourse/UII → IVF/ICSI per couple's profile, age and duration of infertility; ensure counselling about success rates, costs and ethics.

### 6. MODERN CHALLENGES FRAMED THROUGH CHARAKA'S LENS

1. **Delayed childbearing (Ritu):** Age-related decline in oocyte quantity/quality compresses the fertile window—necessitates earlier evaluation and decisive ART referral.
2. **Metabolic disease, obesity and PCOS (Ambu):** Nutrition and endocrine imbalance reflect impaired *ambu*; lifestyle and metabolic correction are foundational.
3. **Environmental/occupational toxins & heat (Bīja/Kṣetra):** Endocrine disruptors, heat exposure (e.g., prolonged laptops/saunas), and pollutants may impair semen quality and endometrial receptivity—mitigation strategies should be discussed.
4. **Male factor under-recognition (Bīja):** Despite ~50% involvement, men are often evaluated late; adopt a “couple-centric” pathway from the outset.
5. **Access and affordability:** WHO highlights inequity in fertility-care access; Ayurvedic outpatient pathways can provide early counselling, lifestyle optimization and triage, reducing delays to definitive care.

## 7. PROPOSED INTEGRATIVE CLINICAL PATHWAY

Step	Clinical Action	Acharya Charaka Lens (Four Pillars)	Modern Correlates/Notes
1. Presentation	Couple presents with subfertility ( $\geq 12$ months of unprotected intercourse; earlier if $\geq 35$ yrs or risk factors present)	—	Standard infertility definition (ESHRE/ASRM)
2. Initial Couple Assessment	Detailed history, physical examination	<i>Doṣa-srotas</i> evaluation	Lifestyle, menstrual, sexual, occupational, systemic history
3. Basic Investigations	CBC, TSH, Semen analysis, Cycle tracking/TVS	Foundation for <i>Bija</i> and <i>Ambu</i> assessment	Early, low-cost tests
4. Ritu (Time)	Confirm ovulation, correct irregular cycles	<i>Ritu-vaigunya</i>	Ovulation studies, mid-luteal progesterone, AMH, AFC
5. Kṣetra (Field)	Evaluate uterine cavity, tubal patency, cervical factors	<i>Yoni-mārga, garbhāśaya</i>	HSG, saline sonography, hysteroscopy
6. Ambu (Nutrition/Environment)	Assess BMI, metabolic/endocrine function, stress, sleep, diet	<i>Āhāra-rasa, Ojas, Agni</i>	HbA1c, thyroid tests, Vit D/B12, lifestyle counselling
7. Bija (Gametes)	Evaluate semen and ovarian reserve/quality	<i>Śukra</i> and <i>Ārtava</i>	WHO semen analysis, sperm DNA fragmentation (if needed), ovarian reserve tests
8. Management Options	Lifestyle optimisation, <i>rasāyana/vājīkaraṇa</i> , <i>pañcakarma</i> (select cases), counselling	Holistic support	Combine with ovulation induction, IUI, IVF/ICSI as indicated
9. Escalation	Shared decision for ART (IUI → IVF → ICSI)	<i>Samprāpti-vidhātana</i> (breaking the pathology progression)	Individualized, based on age, duration, factor severity
10. Ongoing Support	Lifestyle counselling, Ayurvedic adjuncts, psychosocial support	Sustaining <i>Doṣa-dhātu-sāmya</i>	Enhances ART outcomes, reduces stress, improves adherence

## 8. RESEARCH GAPS AND FUTURE DIRECTIONS

- High-quality trials on defined Ayurvedic interventions (standardized *rasāyana/vājīkaraṇa* formulations, *uttara-basti* protocols) with modern endpoints (live birth, time-to-pregnancy, OHSS rates, semen DNA fragmentation).
- Implementation studies on Ayurveda-led preconception clinics to reduce time-to-diagnosis and improve ART readiness.
- Mechanistic studies linking *agni/ojas* constructs to measurable metabolic-immunologic biomarkers.

## 9. CONCLUSION

Acharya Charaka's *Garbha-sambhava-samagri* offers a precise, clinically translatable scaffold that dovetails with modern reproductive medicine. Operationalizing Ritu-Kṣetra-Ambu-Bija alongside contemporary diagnostics can shorten the pathway to pregnancy while preserving patient values and safety.

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