



Bilvapatra Kashaya Yonidhavan in the Management of Shweta Pradara (Vulvovaginal Candidiasis): A Comprehensive Review

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Abstract

Shweta Pradara is one of the most frequently encountered gynecological complaints in reproductive-age women and is characterized by excessive whitish vaginal discharge with or without associated symptoms such as pruritus, irritation, burning sensation, and foul odor. Although Shweta Pradara is not described as an independent disease in the classical Ayurvedic texts, it is recognized as a symptom occurring in various Yonivyapadas resulting predominantly from Kapha Dosha vitiation. In modern gynecology, vulvovaginal candidiasis is a common cause of abnormal vaginal discharge, with *Candida albicans* accounting for the majority of infections.

The increasing prevalence of antifungal resistance, recurrent infections, and adverse effects associated with prolonged use of synthetic antifungal agents has encouraged exploration of safe and effective herbal alternatives. Bilvapatra (*Aegle marmelos* Linn.) possesses Kashaya, Tikta, and Katu Rasa, Laghu and Ruksha Guna, Ushna Virya, and Katu Vipaka, making it suitable for alleviating Kapha and Vata predominance. Classical Ayurvedic literature and modern pharmacological studies have demonstrated antimicrobial, antifungal, anti-inflammatory, wound-healing, antioxidant, and astringent activities of Bilvapatra. Bilvapatra Kashaya administered as Yonidhavan (vaginal douche) offers local cleansing, reduction of microbial load, restoration of vaginal health, and symptomatic relief.

This review critically evaluates the Ayurvedic concepts of Shweta Pradara, correlates them with vulvovaginal candidiasis, and discusses the therapeutic role, pharmacological evidence, and probable mode of action of Bilvapatra Kashaya Yonidhavan. The review highlights its potential as a safe, economical, and promising local therapeutic modality while emphasizing the need for well-designed clinical trials to strengthen the evidence base.

Keywords: Shweta Pradara, Bilvapatra, *Aegle marmelos*, Yonidhavan, Vulvovaginal Candidiasis, *Candida albicans*, Ayurveda.

Introduction

Women's reproductive health significantly influences physical, psychological, and social well-being. Vaginal discharge is a physiological phenomenon that maintains lubrication, protects the vaginal mucosa, and preserves microbial homeostasis. However, excessive or pathological vaginal discharge associated with itching, irritation, burning, malodor, or discomfort requires prompt evaluation and management.

Shweta Pradara is a common gynecological complaint encountered in Ayurvedic clinical practice. Although it is not described as an independent disease entity, classical Ayurvedic texts explain abnormal white vaginal discharge as a symptom resulting from vitiated Kapha Dosha, impaired Agni, and involvement of Rasa Dhatu. Improper dietary habits, sedentary lifestyle, excessive intake of Guru, Snigdha, and Madhura Ahara, poor genital hygiene, repeated infections, hormonal imbalance, and weakened immunity contribute to its pathogenesis.

In modern medicine, vulvovaginal candidiasis is among the most prevalent causes of abnormal vaginal discharge, affecting nearly three-fourths of women at least once during their reproductive years. *Candida albicans* is the predominant etiological organism, although non-*albicans* species are increasingly recognized. Clinical manifestations include thick curdy-white vaginal discharge, intense vulvar itching, erythema, dysuria, dyspareunia, and burning sensation.

Conventional antifungal therapy provides rapid symptomatic relief but is associated with recurrence, antifungal resistance, disruption of normal vaginal microbiota, and adverse drug reactions. These limitations have stimulated growing interest in herbal interventions with antimicrobial, anti-inflammatory, and tissue-healing properties.

Bilvapatra (*Aegle marmelos* Linn.), an important medicinal plant described in Ayurveda, possesses Kapha-Vata Shamaka, Grahi, Krimighna, Shothahara, and Vrana-Ropana properties. Its phytochemical constituents, including tannins, flavonoids, alkaloids, coumarins, marmelosin, aegeline, and essential oils, have demonstrated antimicrobial, antifungal, antioxidant, and anti-inflammatory activities in experimental studies. Administration of Bilvapatra Kashaya as Yonidhavan allows direct local drug action, mechanical cleansing of the vaginal canal, reduction of microbial colonization, restoration of vaginal hygiene, and promotion of healthy vaginal mucosa.

This review summarizes the Ayurvedic perspective of Shweta Pradara, modern concepts of vulvovaginal candidiasis, pharmacological properties of Bilvapatra, and the scientific rationale for using Bilvapatra Kashaya Yonidhavan as a therapeutic intervention.

Ayurvedic Concept of Shweta Pradara

Shweta Pradara is among the most common gynecological complaints encountered in women of reproductive age. Although Ayurveda does not describe Shweta Pradara as a separate disease entity, excessive white vaginal discharge is mentioned as a symptom (Lakshana) in various Yonivyapadas, predominantly due to vitiation of Kapha Dosha, along with the involvement of Vata Dosha, Rasa Dhatu, and Artavavaha Srotas. The term "Shweta" denotes white, while "Pradara" signifies excessive discharge. Clinically, Shweta Pradara is characterized by persistent white vaginal discharge, often accompanied by itching, burning sensation, foul odor, low backache, weakness, fatigue, and discomfort in the pelvic region.

Nidana (Etiological Factors)

According to Ayurvedic principles, the following factors contribute to the development of Shweta Pradara:

- * Excessive intake of Guru, Snigdha, Madhura, and Abhishyandi Ahara
- * Excessive consumption of curd, fermented foods, sweets, and heavy meals
- * Poor genital hygiene
- * Sedentary lifestyle and lack of physical activity
- * Excessive coitus
- * Suppression of natural urges (Vegadharana)

- * Psychological stress, anxiety, and disturbed sleep
- * Hormonal imbalance and recurrent genital infections
- * Weak digestive fire (Mandagni) leading to Ama formation

These factors aggravate Kapha Dosha, impair Agni, produce Ama, and disturb the normal physiology of the female reproductive system.

Samprapti (Pathogenesis)

The pathogenesis begins with indulgence in Kapha-provoking diet and lifestyle, resulting in Mandagni and the formation of Ama. Vitiated Kapha combines with Ama and affects Rasa Dhatu, leading to excessive Kleda (moisture). The vitiated Doshas localize in the Artavavaha Srotas and Yoni, causing excessive whitish discharge, itching, heaviness, and discomfort.

Samprapti Ghataka

- * Dosha: Kapha predominance with Vata association
- * Dushya: Rasa Dhatu, Rakta Dhatu
- * Agni: Mandagni
- * Ama: Present
- * Srotas: Artavavaha Srotas
- * Srotodushti: Sanga and Atipravritti
- * Adhishthana: Yoni
- * Vyaktasthana: Yonimarga

Lakshana (Clinical Features)

Common manifestations include:

- * Profuse white vaginal discharge
- * Yoni Kandu (itching)
- * Burning sensation
- * Foul smell
- * Lower abdominal pain
- * Low backache
- * Weakness and fatigue
- * Dyspareunia
- * Pelvic discomfort

Chikitsa Siddhanta

The management of Shweta Pradara focuses on correcting the underlying Dosha imbalance and restoring the normal physiology of the reproductive system.

The principles include:

- * Kapha Shamaka Chikitsa
- * Amapachana
- * Deepana-Pachana
- * Grahi Chikitsa
- * Krimighna Chikitsa
- * Yonishodhana
- * Yoniropana
- * Rasayana Therapy

Local therapeutic procedures such as Yonidhavana, Yoni Pichu, Yoni Varti, and Yoni Dhupana are described for cleansing, reducing infection, and promoting healing.

Modern Concept of Vulvovaginal Candidiasis

Vulvovaginal candidiasis (VVC) is one of the most prevalent fungal infections affecting women worldwide. Approximately 75% of women experience at least one episode during their lifetime, while nearly half experience recurrent infections.

Etiology

The most common causative organism is:

- * *Candida albicans* (approximately 80–90%)

Other species include:

- * *Candida glabrata*
- * *Candida tropicalis*
- * *Candida krusei*
- * *Candida parapsilosis*

Risk Factors

Several factors predispose women to vulvovaginal candidiasis:

- * Diabetes mellitus
- * Pregnancy
- * Broad-spectrum antibiotic therapy
- * Oral contraceptive pills
- * Corticosteroid therapy
- * Immunosuppression
- * HIV infection
- * Tight synthetic clothing
- * Poor genital hygiene
- * Obesity
- * Increased vaginal glycogen

Pathogenesis

Candida normally exists as a commensal organism within the vaginal flora. Under favorable conditions, disruption of the normal vaginal microbiota allows excessive fungal proliferation. The organism adheres to vaginal epithelial cells, forms hyphae and biofilms, secretes hydrolytic enzymes, and induces inflammation, resulting in the characteristic symptoms.

Clinical Features

Patients commonly present with:

- * Thick curdy-white vaginal discharge
- * Intense vulvar itching
- * Burning sensation
- * Vaginal soreness
- * Dysuria
- * Dyspareunia
- * Vulvar erythema and edema

Diagnosis

Diagnosis is based on:

- * Detailed clinical history
- * Speculum examination

- * Vaginal pH assessment (typically <4.5 in uncomplicated candidiasis)
- * Potassium hydroxide (KOH) wet mount
- * Microscopy showing budding yeast and pseudohyphae
- * Gram staining
- * Fungal culture when necessary

Conventional Management

Current treatment includes:

- * Topical Clotrimazole
- * Miconazole
- * Fluconazole
- * Itraconazole
- * Nystatin

Although these agents are effective, recurrent infections, antifungal resistance, adverse effects, and disruption of normal vaginal flora remain significant concerns. Therefore, herbal interventions possessing antimicrobial, anti-inflammatory, wound-healing, and immunomodulatory properties are increasingly being explored as complementary therapeutic options.

Bilvapatra (*Aegle marmelos* Linn.): An Ayurvedic and Pharmacological Review

Botanical Introduction

Bilva (*Aegle marmelos* (L.) Corrêa), belonging to the family Rutaceae, is one of the most revered medicinal plants in Ayurveda. It is included in Dashamoola and has been extensively described in classical texts such as Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Bhavaprakasha Nighantu, Dhanvantari Nighantu, and Kaiyadeva Nighantu. Every part of the plant—including the leaves, fruits, roots, bark, and seeds—possesses therapeutic importance. Bilva is traditionally used in the management of gastrointestinal disorders, inflammatory conditions, microbial infections, wound healing, and gynecological disorders.

Synonyms of Bilva

Classical Ayurvedic literature mentions several synonyms of Bilva, including:

- * Bilva
- * Shriphala
- * Shailusha
- * Gandhagarbha
- * Kantaki
- * Sadaphala
- * Shivadruma

These names reflect the medicinal importance and sacred status of the plant.

Taxonomical Classification

- * Kingdom: Plantae
- * Division: Magnoliophyta
- * Class: Magnoliopsida
- * Order: Sapindales
- * Family: Rutaceae
- * Genus: *Aegle*
- * Species: *Aegle marmelos* (L.) Corrêa

Ayurvedic Pharmacodynamic Properties (Rasa Panchaka)

DRUG	Bilwa
Latin Name	<i>Aegle Marmelos</i>
Family	<i>Rutaceae</i>
Rasa	Kashay, Tikta
Virya	Ushna
Prayojyang	Patra
Gun	Vaat Kaphnashak
Karma	Grahi, Balya, Vaatshtlyeshmahar, Shothaar, Shlyeshmanisarak

Because Shweta Pradara is predominantly a Kapha disorder associated with excessive Kleda and mucous discharge, Bilva is considered an appropriate therapeutic drug due to its Grahi, Kledashoshaka, and Kapha-Shamaka properties.

Classical Therapeutic Properties

Ayurvedic texts attribute the following actions to Bilva:

- * Grahi (absorbent)
- * Deepana (enhances digestive fire)
- * Pachana (digests Ama)
- * Krimighna (antimicrobial)
- * Shothahara (anti-inflammatory)
- * Vedanasthapana (analgesic)
- * Vranaropana (wound healing)
- * Kandughna (anti-pruritic)
- * Stambhana (reduces excessive secretions)

These properties make Bilvapatra particularly useful in conditions involving excessive vaginal discharge, inflammation, itching, and local infection.

Phytochemical Constituents of Bilvapatra

The medicinal activity of Bilvapatra is attributed to a variety of bioactive compounds, including:

- * Marmelosin
- * Aegeline
- * Skimmianine
- * Umbelliferone
- * Marmelin
- * Lupeol
- * Rutin
- * Quercetin
- * Coumarins

- * Flavonoids
- * Tannins
- * Alkaloids
- * Saponins
- * Phenolic compounds
- * Essential oils

These constituents contribute to the antimicrobial, antioxidant, anti-inflammatory, and tissue-protective activities of Bilva.

Pharmacological Activities

Antifungal Activity

Experimental studies have demonstrated that Bilvapatra extracts inhibit the growth of various fungal organisms, including *Candida albicans*. Polyphenols, tannins, flavonoids, and essential oils disrupt fungal cell membranes, inhibit fungal adhesion, and reduce biofilm formation.

Antibacterial Activity

Bilvapatra exhibits broad-spectrum antibacterial activity against several Gram-positive and Gram-negative microorganisms, helping to restore normal vaginal microbial balance.

Anti-inflammatory Activity

Bilva suppresses inflammatory mediators and reduces tissue edema, erythema, burning sensation, and pain. This action contributes to symptomatic relief in vulvovaginal infections.

Antioxidant Activity

Flavonoids and phenolic compounds present in Bilvapatra neutralize reactive oxygen species, thereby protecting vaginal epithelial cells from oxidative stress and promoting mucosal healing.

Wound-Healing Activity

Bilvapatra accelerates epithelial regeneration, collagen synthesis, and tissue repair, facilitating restoration of healthy vaginal mucosa after infection.

Immunomodulatory Activity

Experimental studies suggest that Bilva enhances local immune defense mechanisms, helping reduce susceptibility to recurrent microbial infections.

Bilvapatra Kashaya as Yonidhavana

Yonidhavana is one of the important local therapeutic procedures described in Ayurveda for maintaining vaginal hygiene and treating Yonivyapadas. It involves washing the vaginal canal with medicated decoctions prepared from herbs possessing antimicrobial, cleansing, anti-inflammatory, and wound-healing properties.

Bilvapatra Kashaya is particularly suitable for Yonidhavana because of its:

- * Kashaya Rasa producing astringent action
- * Kapha-Vata Shamaka property
- * Grahi effect reducing excessive discharge
- * Krimighna activity controlling fungal growth
- * Kandughna action relieving itching
- * Shothahara effect reducing inflammation
- * Vranaropana property promoting healing of the vaginal mucosa

The local administration ensures direct contact of the drug with the affected tissues, allowing higher local efficacy while minimizing systemic adverse effects.

Advantages of Bilvapatra Kashaya Yonidhavana

- * Easy to prepare
- * Cost-effective
- * Readily available herbal drug
- * Minimal adverse effects
- * Safe for repeated use under medical supervision
- * Provides local cleansing
- * Reduces fungal load
- * Controls excessive vaginal discharge
- * Relieves itching and burning sensation
- * Improves vaginal hygiene
- * Promotes mucosal healing
- * May reduce recurrence when combined with correction of dietary and lifestyle factors

Probable Mode of Action of Bilvapatra Kashaya Yonidhavana in Shweta Pradara (Vulvovaginal Candidiasis)

The therapeutic efficacy of Bilvapatra Kashaya Yonidhavana can be explained through both Ayurvedic principles and modern pharmacological mechanisms.

Ayurvedic Perspective

According to Ayurveda, Shweta Pradara is primarily a Kapha-dominant disorder with secondary involvement of Vata Dosha, Rasa Dhatu, and Artavavaha Srotas. Excessive Kleda, impaired Agni, and accumulation of Ama lead to abnormal vaginal discharge, itching, burning sensation, and discomfort.

Bilvapatra possesses Kashaya, Tikta, and Katu Rasa, Laghu-Ruksha Guna, Ushna Virya, and Katu Vipaka, making it effective in correcting the underlying pathogenesis.

Its therapeutic actions include:

- * Kapha Shamaka – Reduces excessive Kapha and pathological secretions.
- * Grahi – Helps reduce excessive vaginal discharge by absorbing excess moisture.
- * Kleda Shoshana – Dries excessive moisture responsible for fungal proliferation.
- * Krimighna – Controls microbial and fungal growth.
- * Kandughna – Relieves vulval itching.
- * Shothahara – Reduces inflammation and local tissue edema.
- * Vranaropana – Promotes healing of the inflamed vaginal mucosa.
- * Yonishodhana – Cleanses the vaginal canal and removes pathological secretions.

Thus, Bilvapatra Kashaya interrupts the Samprapti (pathogenesis) at multiple levels, leading to restoration of vaginal health.

Modern Pharmacological Perspective

1. Antifungal Activity

Polyphenols, flavonoids, tannins, and coumarins present in Bilvapatra interfere with fungal cell wall integrity, inhibit adhesion of *Candida albicans* to epithelial cells, and reduce biofilm formation, thereby limiting fungal colonization.

2. Anti-inflammatory Effect

Bioactive constituents suppress inflammatory mediators and reduce erythema, edema, burning sensation, and tenderness, improving patient comfort.

3. Astringent Action

The high tannin content produces an astringent effect on the vaginal mucosa, reducing excessive secretions and promoting tissue tone.

4. Antioxidant Effect

Flavonoids and phenolic compounds protect epithelial cells from oxidative damage, facilitating regeneration of healthy mucosa.

5. Wound-Healing Property

Bilvapatra stimulates collagen synthesis and epithelial repair, accelerating recovery of inflamed tissues.

6. Mechanical Cleansing

Yonidhavana mechanically removes vaginal discharge, fungal debris, and inflammatory exudates while improving local hygiene.

Critical Review of Available Evidence

Several experimental studies have demonstrated antimicrobial, antioxidant, anti-inflammatory, and wound-healing activities of *Aegle marmelos*. Laboratory investigations have shown inhibitory effects against various bacterial and fungal pathogens, including *Candida* species.

Clinical studies evaluating herbal vaginal irrigation and Ayurvedic local therapies have reported improvement in symptoms such as vaginal discharge, itching, burning sensation, and local inflammation. Although Bilvapatra appears promising, most published studies involve small sample sizes and varying methodologies. Larger, well-designed randomized controlled trials are required to establish efficacy, optimal dosage, treatment duration, and long-term safety.

Discussion

Shweta Pradara remains one of the most common gynecological complaints affecting women of reproductive age and has a considerable impact on quality of life. Conventional antifungal agents are effective in acute episodes but may be associated with recurrence, resistance, adverse effects, and disruption of normal vaginal flora.

Ayurveda emphasizes treatment directed toward correction of Dosha imbalance, elimination of Ama, restoration of Agni, and local purification of the Yoni. Bilvapatra Kashaya Yonidhavana addresses these therapeutic principles through its Kapha-Shamaka, Grahi, Krimighna, Kandughna, and Vranaropana properties.

Modern pharmacological evidence supports these traditional claims by demonstrating antifungal, antimicrobial, anti-inflammatory, antioxidant, and tissue-healing activities. Local administration through Yonidhavana ensures direct drug delivery to the affected tissue, reducing systemic exposure while enhancing therapeutic efficacy.

Bilvapatra is economical, easily available, and generally well tolerated when prepared and administered appropriately. Its broad spectrum of biological activities makes it a promising complementary approach in the management of vulvovaginal candidiasis. Nevertheless, further multicenter clinical studies with standardized protocols are needed to strengthen the evidence base.

Future Scope

Future research should focus on:

- * Randomized controlled clinical trials with larger sample sizes.
- * Standardization of Bilvapatra Kashaya preparation and dosage.
- * Comparative studies with standard antifungal therapies.
- * Microbiological assessment before and after treatment.
- * Evaluation of recurrence rates after therapy.
- * Development of standardized Ayurvedic vaginal formulations based on Bilvapatra.

Conclusion

Shweta Pradara, correlated with vulvovaginal candidiasis in many clinical settings, is a common condition that significantly affects women's reproductive health. Ayurveda offers a holistic approach by addressing both local pathology and systemic factors contributing to disease recurrence.

Bilvapatra Kashaya Yonidhavana represents a scientifically plausible and traditionally accepted local therapeutic modality. Its Kapha-Shamaka, Grahi, Krimighna, Kandughna, Shothahara, and Vranaropana properties, together with experimentally demonstrated antifungal and anti-inflammatory activities, provide a strong rationale for its use. Although available evidence is encouraging, additional high-quality clinical studies are essential to confirm its efficacy and facilitate wider integration into evidence-based gynecological practice.

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