



Review Article

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## ROLE OF PUNARNAVA IN THE MANAGEMENT OF GYNAECOLOGICAL DISORDERS: A COMPREHENSIVE REVIEW

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### ABSTRACT

Punarnava (*Boerhavia diffusa*) is a highly valued medicinal herb in Ayurveda, known for its extensive range of therapeutic applications, including its role in managing gynaecological disorders. This review aims to provide a detailed exploration of Punarnava's use in traditional medicine, focusing on its pharmacological properties, therapeutic efficacy, and historical usage in gynaecological disorders. This review consolidates taxonomical data, botanical descriptions, chemical constituents, and Ayurvedic perspectives to offer a holistic understanding of the herb's medicinal potential. Punarnava's properties, such as its anti-inflammatory, diuretic, and antispasmodic actions, make it an important herb for managing conditions like dysmenorrhea, menorrhagia, and other gynecological diseases.

**Keywords:** Punarnava, gynecological disorders, *Boerhavia diffusa*, pharmacological actions, dysmenorrhea, menorrhagia.

## INTRODUCTION

In Ayurvedic medicine, herbs play a significant role in managing a variety of health conditions, including gynaecological disorders. One such herb is Punarnava (*Boerhavia diffusa*), which has been utilized traditionally for its rejuvenating and healing properties.<sup>1</sup> With increasing modern interest in natural and alternative treatments, Punarnava's role in gynaecological health is receiving renewed attention. This review seeks to consolidate available evidence on the use of Punarnava in the management of gynaecological disorders, from both modern and Ayurvedic perspectives.<sup>2</sup>

Gynaecological disorders, such as dysmenorrhea, menorrhagia, leucorrhea, and polycystic ovary syndrome (PCOS), are prevalent health issues affecting millions of women globally. These disorders often result from hormonal imbalances, inflammation, infections, and improper lifestyle habits. Conventional treatments for such conditions, though effective, sometimes come with side effects and may not address the underlying causes.<sup>3</sup> In contrast, Ayurveda, with its holistic approach, aims to treat the root causes of these disorders by restoring the balance of the *Tridosha* (Vata, Pitta, and Kapha) and supporting the body's natural healing processes.

Punarnava, with its wide array of pharmacological properties, has been traditionally used to manage various menstrual and reproductive health issues. Its anti-inflammatory, diuretic, antispasmodic, and antimicrobial properties make it an ideal herb for treating conditions like dysmenorrhea (painful menstruation), menorrhagia (heavy menstrual bleeding), and leucorrhea (vaginal discharge).<sup>4</sup> Additionally, its ability to promote healthy digestion and regulate fluid balance in the body supports its use in managing premenstrual bloating and fluid retention, which are common in conditions like PCOS.<sup>5</sup>

Recent pharmacological studies have further validated the therapeutic potential of Punarnava in modern medicine. The herb's bioactive compounds, including alkaloids, flavonoids, and glycosides, have shown promising effects in modulating inflammation, balancing hormonal levels, and protecting against oxidative stress, which are key factors in the pathogenesis of gynaecological disorders.<sup>6</sup> The convergence of ancient Ayurvedic wisdom and modern scientific research thus presents Punarnava as a viable natural remedy for managing gynaecological conditions.<sup>7</sup>

This review aims to provide a comprehensive analysis of the role of Punarnava in the management of gynaecological disorders, exploring its traditional uses, pharmacological properties, and contemporary therapeutic applications.<sup>8</sup> By integrating Ayurvedic principles with modern medical

research, this review seeks to highlight Punarnava's potential as a holistic and effective treatment for women's health issues.

## AIM AND OBJECTIVES

**AIM** - To explore the role of Punarnava in managing gynaecological disorders

## OBJECTIVES

1. To discuss the pharmacological properties of Punarnava.
2. To assess its traditional usage in gynaecological disorders.
3. To evaluate scientific studies supporting its efficacy in managing conditions like dysmenorrhea, menorrhagia, and other related disorders.
4. To provide insights into the herb's chemical composition and therapeutic applications.

## MATERIALS AND METHODS

The review is based on comprehensive data sourced from classical Ayurvedic texts, modern pharmacological studies, and clinical trials. Textual references include Charaka Samhita, Sushruta Samhita, and Bhav prakasha Nighantu. Online databases such as PubMed, Science-Direct, and Google Scholar were consulted to obtain peer-reviewed studies on Punarnava's pharmacological actions.

## ABOUT PUNARNAVA

**Table No. 1 Taxonomical Classification<sup>9</sup>**

<b>Kingdom</b>	<b>Plantae</b>
<b>Division</b>	Magnoliophyta
<b>Class</b>	Magnoliopsida
<b>Order</b>	Caryophyllales
<b>Family</b>	Nyctaginaceae
<b>Genus</b>	Boerhavia
<b>Species</b>	Boerhavia diffusa

**Table No. 2 Vernacular Names<sup>10</sup>**

Language	Name
Sanskrit	Punarnava
Hindi	Gadahpurna, Raktapunarnava
Marathi	Tambdihog, Ghetul
Tamil	Mukarattai
Telugu	Atikamamidi
Malayalam	Talutakam
Bengali	Ghetul

**Geographical Distribution<sup>11</sup>**- Punarnava is widely distributed in tropical and subtropical regions, including India, Africa, and the Americas. In India, it is found abundantly in the Himalayas, as well as in central and southern regions. It grows as a weed in cultivated lands, roadside areas, and waste places.

**Botanical Description<sup>12</sup>**- Punarnava is a perennial creeping herb with pink or white flowers, belonging to the family Nyctaginaceae. It has a long, spreading root system, ovate leaves, and a stem that is either prostrate or ascending. The plant is known for its ability to regenerate after withering, which reflects its Sanskrit name *Punarnava* (meaning “the one which rejuvenates”).

**Table No. 3 Historical Review According to different Acharya's**

Acharya	Reference	Description
Charaka	<i>Charaka Samhita</i> (Chikitsa Sthana)	Describes Punarnava as an anti-inflammatory and rejuvenating herb, useful in managing menstrual disorders and uterine health.
Sushruta	<i>Sushruta Samhita</i> (Sutra Sthana)	Cites the herb's role in treating vaginal discharge and enhancing fertility.
Vagbhata	<i>Ashtanga Hridaya</i> (Chikitsa Sthana)	Mentions Punarnava for its diuretic and anti-spasmodic properties in menstrual disorders.
Bhavamisra	<i>Bhavprakash Nighantu</i> (Haritakyadi Varga)	Acknowledges the use of Punarnava in treating gynecological infections, edema, and dysmenorrhea.

**Table No. 4 Chemical Constituents<sup>13</sup>**

Constituent	Description
Alkaloids	Punarnavine, boerhavine
Flavonoids	Quercetin, Kaempferol
Sterols	$\beta$ -sitosterol, Stigmasterol
Glycosides	Punarnavoside
Triterpenoids	Oleanolic acid
Saponins	Saponins A and B

**Table No. 5 Pharmacological Actions<sup>14</sup>**

Pharmacological Action	Description
<b>Anti-inflammatory</b>	Reduces inflammation in reproductive organs and relieves pain during menstruation.
<b>Diuretic</b>	Promotes the elimination of excess fluids, useful in conditions like PCOS and premenstrual bloating.
<b>Antioxidant</b>	Protects the cells from oxidative damage, improving overall uterine health.
<b>Antispasmodic</b>	Relieves spasms and cramps associated with dysmenorrhea.
<b>Antimicrobial</b>	Effective against microbial infections in the reproductive system.

**Therapeutic Doses and Uses<sup>15</sup>**

- **Therapeutic Dosage:** 3-6 grams of Punarnava powder daily or 20-40 mL of its decoction.
- **Therapeutic Uses in Gynaecology:**
  - **Dysmenorrhea:** Reduces menstrual cramps and inflammation.
  - **Menorrhagia:** Controls heavy bleeding by improving uterine tone.

- **Leucorrhea:** Treats white discharge by reducing inflammation and infection.
- **PCOS (Polycystic Ovary Syndrome):** Balances hormonal levels and reduces cyst formation.

## DISCUSSION: -

The management of gynaecological disorders through herbal remedies has gained significant attention in recent years due to the limitations of conventional treatments and their associated side effects. In this context, *Punarnava (Boerhavia diffusa)*, a time-tested herb in Ayurveda, offers a promising natural alternative for treating various gynaecological conditions. The herb's holistic approach, focusing on balancing the *Tridoshas* (Vata, Pitta, and Kapha) and addressing the root cause of the disorder, aligns with Ayurveda's foundational principles of disease management.<sup>16</sup>

Punarnava's efficacy in managing gynaecological disorders, particularly menstrual irregularities, can be attributed to its potent pharmacological properties. The anti-inflammatory and analgesic effects of the herb, as evidenced in various studies, make it particularly useful in conditions like dysmenorrhea, where pain and inflammation are primary symptoms. The herb's ability to reduce uterine inflammation and relieve spasms further supports its use in alleviating painful menstruation. Additionally, Punarnava's diuretic action helps in managing premenstrual bloating and water retention, which are common complaints among women with hormonal imbalances or conditions like PCOS.<sup>17</sup>

One of the key roles of Punarnava in gynaecology is its ability to modulate hormonal imbalances. Hormonal fluctuations, particularly involving estrogen and progesterone, are central to the pathogenesis of many gynaecological disorders, including menorrhagia, irregular menstruation, and PCOS. Punarnava's phytoestrogenic properties and its ability to regulate endocrine function are critical in restoring hormonal balance and improving menstrual regularity. Moreover, by promoting healthy digestion and detoxification, the herb helps reduce Ama (toxins), which is considered a significant factor in the development of gynaecological disorders according to Ayurvedic teachings.<sup>18</sup>

The herb's antimicrobial activity also plays a vital role in managing infections, particularly in conditions like leucorrhea, where bacterial or fungal infections can exacerbate symptoms. Studies have shown that the bioactive compounds in Punarnava, such as alkaloids and flavonoids, exhibit

strong antimicrobial properties, helping to clear infections and restore the natural flora of the reproductive tract.

From an Ayurvedic perspective, many gynaecological disorders result from an imbalance of *Vata* and *Kapha* doshas. Excess *Vata* can lead to conditions like dysmenorrhea and irregular menstruation, characterized by pain, dryness, and instability in the reproductive system. On the other hand, excess *Kapha* can contribute to conditions like leucorrhea and PCOS, manifesting as sluggishness, fluid retention, and excessive mucus production. Punarnava's ability to pacify both *Vata* and *Kapha* makes it particularly effective in addressing these disorders. Its action in clearing obstructions in the channels (*Srotas*), regulating menstrual flow, and detoxifying the reproductive system aligns with Ayurvedic therapeutic goals.<sup>19</sup>

Modern pharmacological research has validated many of Punarnava's traditional uses in gynaecology. The herb's diuretic, anti-inflammatory, and antispasmodic properties have been well-documented in scientific studies, corroborating its effectiveness in reducing menstrual pain, controlling heavy bleeding, and alleviating premenstrual symptoms. Furthermore, its antioxidant properties provide protection against oxidative stress, which is increasingly recognized as a contributing factor in reproductive health issues, including infertility and ovarian dysfunction.<sup>20</sup>

Despite the promising therapeutic potential of Punarnava, there is a need for more clinical trials to explore its full efficacy and safety in gynaecological disorders. Most studies to date have been conducted in vitro or on animal models, and while the results are encouraging, human trials are essential to establish standardized dosages and to better understand the herb's long-term effects. Additionally, the integration of Punarnava with conventional treatments, such as hormonal therapy or surgical interventions, could be explored to enhance patient outcomes in complex gynaecological conditions.<sup>21</sup>

## **ROLE OF PUNARNAVA IN THE MANAGEMENT OF GYNAECOLOGICAL DISORDERS<sup>22</sup>.**

Punarnava (*Boerhavia diffusa*), a potent herb in Ayurveda, has been traditionally employed to treat a range of gynaecological disorders. The herb's effectiveness is largely due to its versatile pharmacological actions, which include anti-inflammatory, diuretic, antispasmodic, and antimicrobial properties. These actions collectively make Punarnava a valuable therapeutic option for women experiencing menstrual irregularities and other reproductive health concerns.

**Dysmenorrhea (Painful Menstruation)**-Dysmenorrhea, characterized by painful menstrual cramps, is a common gynaecological complaint among women of reproductive age. Punarnava's antispasmodic properties help alleviate the uterine contractions that lead to menstrual cramps. By relaxing the uterine muscles, Punarnava reduces pain and discomfort, providing relief during menstruation. The herb's anti-inflammatory properties further assist in reducing inflammation within the uterus, which is often a contributor to the pain experienced during dysmenorrhea. Punarnava's action in pacifying *Vata* dosha is particularly relevant here, as excess *Vata* is considered the primary factor behind the irregular and painful contractions associated with dysmenorrhea in Ayurvedic understanding. By balancing *Vata*, Punarnava not only reduces the intensity of menstrual cramps but also promotes overall menstrual regularity.<sup>23</sup>

**Menorrhagia (Heavy Menstrual Bleeding)**- Menorrhagia, or excessive menstrual bleeding, is another gynaecological condition where Punarnava can play a critical role. The herb's hemostatic (blood-stopping) and astringent properties help control excessive uterine bleeding by promoting proper contraction of the uterine muscles and regulating menstrual flow. In Ayurveda, menorrhagia is often linked to an imbalance in *Pitta* and *Kapha* doshas, which leads to an increase in heat and fluid accumulation in the body. Punarnava's ability to reduce heat and balance *Pitta* makes it effective in controlling heavy bleeding and promoting normal menstrual flow. In addition to balancing *Pitta* and *Kapha*, Punarnava's action on the *Rakta* (blood) and *Rasa* (plasma) *Dhatus* (tissues) helps in managing the quality of the blood, reducing excessive bleeding and maintaining a healthy menstrual cycle. Its ability to act on the microcirculatory channels (*Srotas*) ensures proper blood flow, preventing conditions like stagnation, which could lead to clot formation and irregular menstruation.<sup>24</sup>

**Premenstrual Syndrome (PMS)**- Premenstrual syndrome, or PMS, is a collection of symptoms that occur before menstruation, often including bloating, mood swings, headaches, and breast tenderness. Punarnava's diuretic action plays a crucial role in reducing bloating and water retention, common premenstrual symptoms. By promoting the elimination of excess fluids from the body, Punarnava helps alleviate the discomfort associated with PMS. Furthermore, Punarnava's adaptogenic and mood-enhancing properties help manage the emotional symptoms of PMS, such as irritability, anxiety, and depression. Ayurveda views PMS as a result of



imbalances in both *Vata* and *Pitta* doshas, and Punarnava's capacity to balance these doshas makes it a valuable herb for alleviating both the physical and emotional symptoms of PMS.<sup>25</sup>

**Leucorrhea (Vaginal Discharge)-** Leucorrhea, characterized by abnormal vaginal discharge, can result from infections, hormonal imbalances, or other underlying conditions. Punarnava's strong antimicrobial activity, as demonstrated in modern pharmacological studies, makes it an effective herb for treating infections that cause leucorrhea. The herb's anti-inflammatory properties also help in reducing inflammation in the reproductive tract, promoting overall reproductive health. In Ayurveda, leucorrhea is often attributed to an imbalance in *Kapha* dosha, leading to excess fluid accumulation and mucus production in the reproductive organs. Punarnava's ability to pacify *Kapha* by promoting the elimination of excess fluids helps in managing the condition. It restores balance in the reproductive system, preventing abnormal discharge and promoting healthy vaginal flora.<sup>26</sup>

**Polycystic Ovary Syndrome (PCOS)-** PCOS is a hormonal disorder that affects women of reproductive age, characterized by irregular menstrual cycles, ovarian cysts, and elevated levels of androgens. Punarnava's anti-inflammatory and diuretic properties make it useful in managing the symptoms of PCOS, such as bloating, irregular periods, and fluid retention. Additionally, the herb helps in balancing hormones and promoting regular menstrual cycles, which are often disrupted in women with PCOS. Punarnava's ability to detoxify the body by eliminating toxins (*Ama*) from the tissues helps in reducing inflammation and preventing the accumulation of cysts in the ovaries. In Ayurveda, PCOS is associated with *Kapha* imbalance, which leads to stagnation and the formation of cysts. Punarnava's *Kapha*-pacifying action helps restore hormonal balance and regulate the reproductive system, making it an effective herb for managing PCOS symptoms.<sup>27</sup>

**Reproductive Health and Fertility-** Punarnava is also known for its ability to rejuvenate and nourish the reproductive system, improving overall reproductive health and fertility. The herb's *Rasayana* (rejuvenating) properties help in revitalizing the uterus, promoting a healthy uterine environment for conception. By balancing the *Tridoshas* and regulating menstrual cycles, Punarnava enhances fertility in women facing reproductive challenges. The herb's ability to act on the *Shukra Dhātu* (reproductive tissue) helps in improving the quality of reproductive fluids and enhancing reproductive function. By supporting the healthy functioning of the reproductive

organs and promoting regular ovulation, Punarnava serves as a valuable herb for women seeking to improve their reproductive health and increase their chances of conception.<sup>28</sup>

## CONCLUSION

Punarnava is a multifaceted herb that has played a crucial role in Ayurvedic treatment of gynaecological disorders for centuries. Its ability to manage conditions such as dysmenorrhea, menorrhagia, leucorrhea, and even hormonal imbalances associated with PCOS has made it an essential herb in women's health. The anti-inflammatory, diuretic, and antispasmodic properties of Punarnava provide substantial therapeutic potential. While further clinical studies are needed to validate traditional claims, the existing body of research supports its use as a complementary therapy in modern gynaecological care.

## CONFLICT OF INTEREST –NIL

## SOURCE OF SUPPORT -NONE

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