



**INTERNATIONAL JOURNAL OF
PHARMACEUTICAL SCIENCES**
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: <https://www.ijpsjournal.com>



Review Article

Comparative Review of Avipattikar Churna and Sutshekhar Rasa in the Management of Acid-Peptic Disorders: Current Evidence and Future Perspective

Shilpa Jayakumar*, Aiswarya Lakshmi T, Reshma Devasia

Department of Pharmacognosy, Al Shifa College of Pharmacy, Perinthalmanna, Malappuram, Kerala.

ARTICLE INFO

Published: 05 Oct 2026

Keywords:

Acid-peptic disorders;
Peptic ulcer disease;
Amlapitta; Avipattikar
Churna; Sutshekhar Rasa;
Ayurveda; Antiulcer
activity; Gastroprotection

DOI:

10.5281/zenodo.23169552

ABSTRACT

Acid peptic disorders (APDs) like peptic ulcer disease, gastritis and gastroesophageal reflux disease are among the most prevalent gastrointestinal diseases with a huge impact on public health. These diseases are chronic, recurring, and have a high rate of complications. The existing standard of care, including proton pump inhibitors, histamine H₂-receptor antagonists, antacids, and *Helicobacter pylori* eradication, has been improved. However, there are some issues linked to the prolonged use of these medicines, such as adverse effects, disease relapses after treatment, antimicrobial resistance, and expensive therapies. Therefore, an increasing number of patients have turned to alternative and traditional remedies for the treatment and prevention of APDs. In the ancient system of medicine known as Ayurveda, there is a group of diseases identical to the acid-peptic disorders called Amlapitta. It was reported that the various classical Ayurvedic preparations were used in the treatment of Amlapitta. Avipattikar Churna and Sutshekhar Rasa were commonly used by Ayurvedic practitioners for the treatment of hyperacidity, burning sensation in the epigastrium region, dyspepsia and other related GI disorders. However, the scientific evidence regarding the effectiveness and safety of these two preparations is scattered across various pharmacological, pharmaceutical, experimental and clinical studies. This review aimed to compare and contrast Avipattikar Churna and Sutshekhar Rasa in terms of their classical description, content, pharmacological actions, pharmaceutical standardization, experimental antiulcer activity, clinical evidence, safety and applications. Additionally, the review also provides details on the research gaps related to Avipattikar Churna and Sutshekhar Rasa, challenges related to the generation of evidence, suggestions and recommendations on future research endeavors. Therefore, this study will contribute to the enhancement of the knowledge of this field, as well as provide a reliable foundation for future clinical and experimental studies on Avipattikar Churna and Sutshekhar Rasa.

***Corresponding Author:** Shilpa Jayakumar

Address: Department of Pharmacognosy, Al Shifa College of Pharmacy, Perinthalmanna, Malappuram, Kerala.

Email ✉: shilpajayakumar123@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



INTRODUCTION

Acid-peptic disorders (APDs) are one of the most common diseases that affect a huge proportion of the population worldwide, contributing to significant economic burdens and negative impacts on the quality of life. Peptic ulcer disease (PUD) is among the most prevalent and common gastrointestinal disorders, characterized by breaks in the gastric or duodenal mucosa. Despite the variety of diagnostic and therapeutic strategies, peptic ulcer disease remains a major health problem in terms of recurrence, complications, and treatment failures. PUD is a multifactorial disease that is primarily due to an imbalance between aggressive and protective factors. The aggressive factors consist of hydrochloric acid and pepsin, *Helicobacter pylori* infection, non-steroidal anti-inflammatory drugs, alcohol, smoking, stress, and oxidative stress. Protective factors are mucous-bicarbonate barriers, prostaglandins, mucosal blood flow, epithelial cell renewal, and endogenous antioxidants. The damage to the integrity of the mucosal lining results in complications such as ulceration, bleeding, perforation, gastric outlet obstruction, and mortality. [5,6,7]

The incidence and prevalence of acid-peptic disorders have skyrocketed in the past years due to unhealthy lifestyles, poor dietary habits, the intake of processed foods, alcohol consumption, and smoking. The use of non-steroidal anti-inflammatory drugs, stress, and *Helicobacter pylori* infection also contribute to these disorders. The conventional treatment strategy for acid-peptic disorders entails the use of proton pump inhibitors, histamine H₂-receptor antagonists, antacids, and mucosal protective agents to reduce the production of gastric acid or treat the infection. The treatment regimen also includes antibiotics which help in eradicating *H. pylori* infection.

However, this therapeutic approach has several limitations which are linked to adverse effects such as treatment failure, recurrence of infection after treatment discontinuation, drug-drug interactions, nutrient deficiency, and development of bacterial resistance to antibiotics. These flaws in conventional therapy have prompted medical researchers to develop an alternative therapeutic agent with desirable effects. [8,9]

The traditional system of medicine, including Ayurveda, has played an essential role in the management and prevention of various diseases, including acid-peptic disorders. The disorders associated with excessive gastric acidity, characterized by heartburn and sour taste in the mouth, are referred to as Amlapitta in Ayurveda. [10,11]

It is caused by the imbalance of Pitta Dosha, improper diet, incompatible food, stress, and a sedentary lifestyle. The manifestations of Amlapitta include sour belching (Amlodgara), burning pain in the epigastrium (Hrit-Kantha Daha), nausea (Utklesha), vomiting (Chardi), anorexia (Aruchi), abdominal discomfort, and indigestion. The management of Amlapitta is aimed at balancing the aggravated Pitta and reducing the symptoms through the use of appropriate diet and lifestyle changes, Shodhana (cleansing) therapies, and the administration of the drugs with Deepana (appetizer), Pachana (digestive), Pitta-Shamaka (Pitta-reducing), Ropana (healing), antioxidant, anti-inflammatory, and gastroprotective properties. [12]

Among the wide range of formulations recommended for the treatment of Amlapitta, Avipattikar Churna and Sutshekhar Rasa are the most commonly prescribed ones. Avipattikar Churna is a classical polyherbal formulation with remarkable carminative, antioxidant, anti-inflammatory, laxative, and gastroprotective



activities. It has been proved that Avipattikar Churna possesses anti-secretory, antiulcer, antioxidant, and mucosal protective effects, which contribute to the healing of various gastrointestinal tract disorders. Sutshekhar Rasa is a classical herbo-mineral formulation indicated for Amlapitta, sour belching, heartburn, nausea, vomiting, and other Pitta-related conditions. It has been shown that Sutshekhar Rasa has Pitta-balancing, digestive, anti-ulcer, and gastroprotective effects. Both formulations have been used in clinical practice for a long time, and their effectiveness has been confirmed by numerous studies. However, there are significant differences between these two formulations in terms of composition, pharmacological properties, and the extent of scientific evidence. [13,14,15]

In the past two decades, there has been an increasing interest worldwide in exploring the use of traditional medicines, one of which is Ayurveda. Therefore, there is a need for further experimental and clinical studies using modern science methods to identify the phytochemistry, pharmaceutical, pharmacological, and toxicological potentials of Ayurvedic drugs, prove their clinical effectiveness, and safety. Avipattikar Churna was proved to possess gastroprotective and antiulcer effects through several experimental and clinical studies. The majority of the available studies on Sutshekhar Rasa have investigated its pharmacological effects, quality assurance, and clinical applications in terms of the management of Amlapitta. The data about these two drugs are complex, extensive, and disconnected, which makes it difficult to identify the relationship between them. [16,17,18,19]

Although both of the medications are considered to be effective in the management of acid-peptic diseases, there is a lack of reviews comparing their clinical application and pharmacological potential

according to the modern evidence-based medicine principles. The majority of the published articles describe the phytochemical, pharmaceutical, pharmacological, and clinical properties of Sutshekhar Rasa and Avipattikar Churna individually, rather than comparatively. [20]

Besides, there is a need for further preclinical and clinical studies to explore the experimental antiulcer activity, as well as the safety and efficacy of Avipattikar Churna and Sutshekhar Rasa. [21]

Therefore, it is of great interest to compare the classical Ayurvedic formulations Avipattikar Churna and Sutshekhar Rasa in terms of their use in the management of acid-peptic disorders. The present review aims to analyze the available data on the classical background, composition, pharmacological effects, experimental antiulcer activity, safety, and future perspectives of Avipattikar Churna and Sutshekhar Rasa. [22,23,24]

PATHOPHYSIOLOGY OF ACID PEPTIC DISORDERS

Acid-peptic disorders encompass various diseases related to dyspepsia attributed to the reduced gastroduodenal defensive capability against aggressive factors and the presence of damaging elements. The gastric mucosa is exposed to highly corrosive agents like acid and pepsin secretions and external irritants such as non-steroidal anti-inflammatory drugs (NSAIDs), alcohol, and *Helicobacter pylori* infection. The gastric mucosa utilizes defence mechanisms against these corrosive elements, including mucous and bicarbonate secretion, prostaglandin synthesis, adequate mucosal blood flow, epithelial cell renewal, and junctional integrity. The protective function and restitution process of the mucosa are disrupted by several damaging agents, resulting in ulcers. [25,26,27,28]



Chronic gastroduodenal inflammation caused by the helical-shaped bacterium known as *Helicobacter pylori* leads to reduced protection of the mucous membrane, thereby facilitating ulceration. The bacterium *Helicobacter pylori* causes the production of gastrin, which in turn provokes increased secretion of gastric juices by the stomach, creating an ulceration risk factor. Moreover, *Helicobacter pylori* reduces bicarbonate secretion and prostaglandin synthesis, weakening the mucosal protective mechanism, which ultimately promotes the occurrence of an ulcer. On the other hand, NSAIDs cause gastroduodenal damage through cyclooxygenase isoenzyme inhibition, resulting in reduced mucosal blood flow and impaired mucus production. The other causes of gastroduodenal ulcers include heavy alcohol consumption, smoking, stress, unhealthy eating habits, bile reflux, and genetic predisposition. [29,30,31]

The production of reactive oxygen species (ROS) leads to oxidative stress, which aggravates the severity of damage to the gastrointestinal mucosa. The increased production of free radicals over antioxidant availability leads to lipid peroxidation, mitochondrial malfunction, DNA damage, cell death, and decreased production of endogenous antioxidants. Oxidative stress also causes impaired epithelial restitution resulting in ulceration and erosion of the gastric mucosa. Inflammation and oxidative injury to the gastric mucosa are key pathological features of acid-peptic disorders. As a result, acute upper gastrointestinal complications including hemorrhage, perforation, and gastric outlet obstruction are frequent causes of morbidity and mortality. [32,33,34]

The various etiologies and pathophysiological mechanisms of acid-peptic disorders require the development of comprehensive therapeutic strategies. A therapy that promotes epithelial cell

proliferation and reduces oxidative stress has a restitutive effect on gastric mucosa. An effective treatment regimen for acid-peptic disease should promote mucosal healing and protect the mucosa from further injury. This information may be used to formulate ayurvedic formulations for the treatment of acid-peptic disease. [35,36]

COMPARATIVE REVIEW OF AVIPATTIKAR CHURNA AND SUTSHEKHAR RASA

Avipattikar Churna and Sutshekhar Rasa are two classical Ayurvedic formulations used for the management of Amlapitta and other acid-peptic disorders. Both preparations are used for the treatment of similar diseases; however, they differ significantly in terms of composition, pharmaceutical nature, therapeutic concepts, and the level of scientific evidence. Avipattikar Churna is a polyherbal formulation containing medicinal plants as the main components with proven therapeutic properties. At the same time, Sutshekhar Rasa is a famous herbo-mineral preparation which includes herbal and purified mineral ingredients. The difference in the composition of the preparations is reflected in their pharmacological properties, mechanisms of action, safety, and various other parameters related to the quality of the formulations. [37,38]

According to Ayurveda, Avipattikar Churna and Sutshekhar Rasa affect the aggravated Pitta and cause it to decrease and restore the balance. In other words, these two preparations help to normalize the functions of the digestive system and eliminate the symptoms of the disease. However, it should be noted that while Avipattikar Churna is traditionally used to treat hyperacidity caused by impaired digestion and constipation due to its laxative effects, Sutshekhar Rasa is indicated in Pitta-type diseases characterized by heartburn,



nausea, vomiting, and other accompanying symptoms. [20-24]

The scientific evidence supporting the benefits of Avipattikar Churna and Sutshekhar Rasa is also different. Modern science was able to reveal the exact effect of the ingredients included in Avipattikar Churna, while there is a lack of research describing the benefits of Sutshekhar Rasa. Research studies indicate that Avipattikar Churna exhibits antioxidant, antisecretory, anti-inflammatory, cytoprotective, and antiulcer activities, as well as gastroprotective and laxative effects. By contrast, the evidence for the effectiveness of Sutshekhar Rasa is limited to clinical observations, studies of pharmaceutical standards, and a few experiments conducted. [8-12,25-30]

Thus, it is necessary to compare and analyze the Ayurvedic evidence, scientific data, and pharmaceutical properties of Avipattikar Churna and Sutshekhar Rasa. Especially since the two preparations are used for the treatment of similar diseases but have different compositions that affect their beneficial effects and mechanisms of action. Moreover, Avipattikar Churna has more scientific evidence of safety and efficacy, while the level of proof for Sutshekhar Rasa remains insufficient. Therefore, the following paragraphs will discuss the difference between the classical Ayurvedic concepts, pharmaceutical properties, and scientific evidence for the use of Avipattikar Churna and Sutshekhar Rasa for the management of acid-peptic diseases. This information will allow a better understanding of the benefits and advantages of the two Ayurvedic preparations and their contributions to modern medicine. [13-19,31-40]

COMPARISON OF FORMULATION

Composition of Avipattikar Churna

Sr. No	Ingredients	Botanical Name
1	shunthi	<i>Zigiber officinale Roscoe</i>
2	Maricha	<i>Piper nigrum L.</i>
3	Pippali	<i>Piper longum L.</i>
4	Haritaki	<i>Terminalia chebula</i>
5	Bibhitaki	<i>Terminalia bellirica</i>
6	Amlaki	<i>Phyllanthus emblica L.</i>
7	Musta	<i>Cyperus rotundus L.</i>
8	Vidanga	<i>Emelia ribes Burns.f.</i>
9	Ela	<i>Elettaria cardamomum</i>
10	Lavaga	<i>Syzygium aromaticum L.</i>
11	Tejapatra	<i>Cinamomum tamala</i>
12	Trivrit	<i>Operculina turpenthum</i>
13	Sharkara	Sugar

Classical reference: Bhaishajya Ratnavali; Ayurvedic Formulary of India (AFI), Part I. [20,21]

Composition of Sutshekhar Rasa

Sr. No	Ingredients	Botanical Name
1	Shunthi	<i>Zigiber officinale Roscoe</i>
2	Maricha	<i>Piper nigrum L.</i>
3	Pippali	<i>Piper longum L.</i>
4	Shuddha parada	<i>Purified mercury</i>
5	Shuddha Gandhaka	<i>Purified sulphur</i>
6	Shunddha Tankana	<i>Purified borax</i>
7	Shankha Bhasma	<i>Calcinated conch shell</i>
8	Dhattura Bija	<i>Datura metel L.</i>
9	Bhringaraja Swarasa	<i>Eclipta prostrata l.</i>

Classical reference: Bhaishajya Ratnavali; Ayurvedic Formulary of India (AFI), Part I. [20,21]

AYURVEDIC PERSPECTIVE OF AVIPATTIKAR CHURNA AND SUTSHEKHAR RASA

From an Ayurvedic perspective, both Avipattikar Churna and Sutshekhar Rasa are classical formulations indicated for the management of Amlapitta, a disorder predominantly caused by vitiation of Pitta Dosha and impairment of Agni (digestive fire). Although both formulations are



employed to restore Pitta equilibrium and improve gastrointestinal function, they differ in their therapeutic principles. Avipattikar Churna is a polyherbal formulation possessing Deepana (enhancement of digestive fire), Pachana (digestion of Ama), Pitta-Shamana (pacification of Pitta), and Mridu Virechana (mild purgative) properties. It helps regulate digestion, facilitates the elimination of aggravated Pitta, and is traditionally indicated in Amlapitta, indigestion, and associated constipation. In contrast, Sutshekhar Rasa is a herbo-mineral formulation primarily indicated for Pitta-Shamana and symptomatic management of Amlapitta. The presence of mineral ingredients such as Shankha Bhasma, along with digestive herbal constituents, is traditionally considered to contribute to acid-neutralizing, digestive-supportive, and gastroprotective effects. Thus, while both formulations aim to alleviate Amlapitta, Avipattikar Churna primarily emphasizes correction of impaired digestion and elimination of aggravated Pitta, whereas Sutshekhar Rasa focuses predominantly on Pitta pacification and relief of associated gastrointestinal symptoms [20-24]

COMPARATIVE PHYTOCHEMICAL PERSPECTIVE OF AVIPATTIKAR CHURNA AND SUTSHEKHAR RASA

The differences in phytochemical content make a significant difference in the mechanism of action and pharmacological features of Ayurvedic preparations. Avipattikar Churna is a polyherbal medicine that includes various phytochemicals, such as flavonoids, phenolic, tannins, alkaloids, glycosides, terpenoids, saponins, and essential oils, with significant antioxidant, anti-inflammatory, gastroprotective, and anti-secretory activity. Sutshekhar Rasa is a herbo-mineral preparation that combines the beneficial properties of herbal and mineral ingredients. Information about the phytochemical content of this preparation is limited, but it is believed that the herbal component has diverse metabolic pathways and possesses antioxidant, digestive, and mucosal healing properties. Moreover, the mineral part of Sutshekhar Rasa enhances the therapeutic effects of herbal components rather than providing phytochemicals. [13-19,39,40]

PARAMETER	AVIPATTIKAR CHURNA	SUTSHEKHAR RASA
Nature of formulation	Classical polyherbal formulation	Classical herbo-mineral formulation
Major phytochemical classes	Flavonoids, phenolics, tannins, alkaloids, glycosides, saponins, terpenoids and volatile oils.	Phytochemicals are derived from the herbal ingredients and include flavonoids, phenolics, tannins, alkaloids and volatile oils; mineral ingredients do not contribute phytochemicals.
Representative marker compounds	Piperine, gallic acid, eugenol, scopoletin, gingerols, chebulinic acid and ellagic acid.	Piperine, gingerols, gallic acid and other plant-derived phenolics are contributed by the herbal constituents; no specific phytochemical markers have been established for the finished formulation.
Major analytical techniques reported	Preliminary phytochemical screening, HPTLC fingerprinting, LC-MS-based phytochemical analysis and marker compound estimation.	Phytochemical information is mainly based on the constituent herbs; studies on the finished formulation largely emphasize physicochemical and elemental characterization rather than detailed phytochemical profiling.
Pharmacological significance	Bioactive phytochemicals contribute to antioxidant, anti-inflammatory, proton pump	Herbal phytochemicals are believed to support antioxidant, digestive and mucosal protective effects, while purified mineral ingredients may



	inhibitory, gastroprotective and antiulcer activities.	provide synergistic therapeutic action according to Ayurvedic principles.
Current evidence status	Comprehensive phytochemical characterization is available with identified marker compounds and chromatographic fingerprints.	Comprehensive phytochemical profiling of the finished formulation remains limited, representing an important area for future research

COMPARATIVE PHARMACOLOGICAL PERSPECTIVE OF AVIPATTIKAR CHURNA AND SUTHSHEKAR RASA

Both Avipattikar Churna and Sutshekhar Rasa have proved their pharmacological actions to treat Amlapitta and peptic ulcer disease. They have an antiulcer, gastroprotective effect, antioxidant, anti-inflammatory, Deepana, and Pachana activities. However, Avipattikar Churna is a polyherbal medicine and has a mechanism of action that

includes the compounds present in it and their effects on the body, and the herb's Mridu Virechana activity, which has a detoxicating function. Sutshekhar Rasa, in its turn, is a herbo-mineral preparation that includes minerals like Shankha Bhasma, which are used as an antacid and Pitta-Shamana.. Thus, although both formulations share similar therapeutic benefits, they differ in their composition and mode of action, making them complementary approaches for the management of acid-peptic disorders [8-12,17,19]

PHARMACOLOGICAL ACTIVITY	AVIPATTIKAR CHURNA	SUTSHEKAR RASA
Antiulcer activity	Reported; promotes ulcer healing and protects gastric mucosa	Reported; reduces gastric irritation and supports ulcer healing
Gastroprotective activity	Protects gastric mucosa through herbal bioactive compounds	Protects gastric mucosa through combined herbal and mineral components
Antioxidant activity	Rich in antioxidant phytochemicals such as phenolics and flavonoids	Exhibits antioxidant activity through herbal constituents
Anti-inflammatory activity	Reduces gastric inflammation	Helps alleviate inflammation associated with gastric disorders
Deepana (appetizer)	present	present
Pachana	present	present
Pitta shamana	present	present
Therapeutic approach	Polyherbal formulation acting mainly through phytoconstituents	Herbo-mineral formulation combining herbal and mineral actions

COMPARATIVE MECHANISM OF ANTIULCER ACTION

Both Avipattikar churna and sutshekhar rasa act through various mechanisms that help to treat ulcers. Avipattikar churna helps to improve digestion through Deepana and Pachana, reduce oxidative stress, protect the gastric mucosa, and

reduce Pitta via a mild laxative effect. On the other hand, sutshekhar rasa alleviates irritation in the stomach by Pitta Shamana and protecting the mucosa. Moreover, being a major ingredient in this formulation, Shankha bhasma is believed to help neutralize the excess acidity in the stomach. Thus, both these drugs help to balance the Pitta



dosha and heal the ulcerated region in the stomach.

[31-38]

MECHANISM OF ACTION	AVIPATTIKAR CHURNA	SUTSHEKHAR RASA
Acid neutralization	Mild acid-neutralizing effect, partly attributed to sugar and herbal constituents	Traditionally associated with Shankha Bhasma, a calcium-rich marine preparation that helps buffer excess gastric acid.
Gastroprotective activity	Protects gastric mucosa through herbal bioactive compounds	Protects gastric mucosa through combined herbal and mineral components
Antioxidant activity	Rich in antioxidant phytochemicals such as phenolics and flavonoids	Exhibits antioxidant activity through herbal constituents
Anti-inflammatory activity	Reduces gastric inflammation	Helps alleviate inflammation associated with gastric disorders

COMPARATIVE EVIDENCE

Experimental studies are essential to verify the traditional claims about the pharmacological effects of the selected Ayurvedic preparations. A number of experiments were conducted to prove

EXPERIMENTAL

the ulcer-healing and ulcer-protective properties of Avipattikar Churna. Meanwhile, the number of experimental studies conducted for Sutshekhar Rasa seems limited. Below are the results of the available experiments, conducted to evaluate the pharmacological properties of Ayurvedic preparations. [8-12,17,19,39,40]

FORMULATION	STUDY CATEGORY	EXPERIMENTAL MODEL/ ASSAY	KEY FINDINGS
AVIPATTIKAR CHURNA	<i>In vitro</i>	Acid neutralizing capacity assay	Demonstrated significant acid-neutralizing capacity, supporting its antacid activity
	<i>Ex vivo</i>	H ⁺ /K ⁺ -ATPase inhibition assay	Hydroalcoholic extract showed significant proton pump inhibitory activity compared with aqueous and alcoholic extracts.
	<i>In vivo</i>	Pylorus ligation-induced gastric ulcer in rats	Increased antioxidant enzyme activity and reduced oxidative stress associated with gastric mucosal injury.
	<i>In vivo</i>	Ethanol-induced gastric ulcer model	Reduced gastric juice volume, total acidity, ulcer index and gastric irritancy index; increased gastric pH with histological protection comparable to ranitidine.
	Integrated experimental validation	Network pharmacology with <i>in vitro</i> , <i>ex vivo</i> and <i>in vivo</i> validation	Significantly reduced gastric lesions and preserved gastric mucosal architecture through enhanced mucosal defence.
SUTSHEKHAR RASA	<i>In vivo</i>	Indomethacin-induced gastric ulcer in Wistar rats	At 2.25 mg/kg, significantly reduced ulcer index; antiulcer activity was comparable to omeprazole
	<i>In vivo</i>	Cold restraint stress-induced gastric ulcer	Significantly inhibited stress-induced gastric lesions and reduced ulcer severity.
	<i>In vivo</i>	Pylorus ligation-induced gastric ulcer	Reduced gastric secretion, free acidity, total acidity and ulcer index compared with ulcer control.



	<i>In vivo</i>	Ethanol-induced gastric ulcer	Produced approximately 50% gastroprotection by reducing gastric mucosal damage
	<i>In vivo</i>	Indomethacin-induced gastric ulcer (comparative study with Kamadugha)	Demonstrated approximately 57.5% inhibition of ulcer formation, indicating significant antiulcer activity

COMPARATIVE SAFETY AND TOXICITY PROFILE

The safety and toxicity of Ayurvedic preparations play a crucial role in establishing their clinical efficacy and scope of application. The reviewed research suggests that Avipattikar Churna, which is a polyherbal preparation, is safe when used at recommended doses. Sutshekhar Rasa, in its turn,

is considered to be free from adverse effects if prepared properly and only by authorized physicians, which, however, has been subject to limited investigations conducted to date. Therefore, while both formulations are widely used in the management of *Amlapitta*, further well-designed toxicological and long-term safety studies are warranted, particularly for Sutshekhar Rasa. [25-30]

SAFETY PARAMETER	AVIPATTIKAR CHURNA	SUTSHEKAR RASA
Formulation type	Classical polyherbal formulation composed predominantly of medicinal plant ingredients.	Herbo-mineral formulation containing herbal ingredients together with purified mineral preparations (e.g., <i>Parada</i> , <i>Gandhaka</i> , <i>Shankha Bhasma</i>); safety depends on proper classical processing (<i>Shodhana</i> and <i>Marana</i>).
Acute toxicity	Available animal studies reported no mortality or significant toxic manifestations at doses substantially higher than the therapeutic dose, suggesting a favourable acute safety profile	No recent well-designed acute toxicity studies on the finished formulation were identified in the peer-reviewed open-access literature.
Subacute / repeated-dose toxicity	Repeated-dose studies did not report significant alterations in body weight, food intake, organ morphology, or routine biochemical parameters at the investigated doses.	Limited published data are available for the finished formulation; systematic repeated-dose toxicity evaluation remains insufficient.
Clinical tolerability	Clinical studies and reviews indicate good tolerability when administered at recommended therapeutic doses under medical supervision, with no serious adverse reactions consistently reported	Generally considered safe in classical practice when manufactured according to Ayurvedic pharmacopeial standards and prescribed under medical supervision; however, robust modern safety studies are limited.
Heavy metal considerations	Heavy metal contamination is generally not an intrinsic concern because the formulation is herbal; nevertheless, compliance with pharmacopeial limits for elemental impurities should be verified for every batch.	Requires stringent quality control because it contains processed mineral ingredients. Heavy metal content should comply with AYUSH/Pharmacopoeial specifications and be verified by analytical testing.
Quality-control requirements	Authentication of raw materials, physicochemical evaluation, chromatographic fingerprinting,	In addition to standard herbal quality-control tests, validation of <i>Bhasma</i> quality and elemental



	microbial limits, pesticide residues, aflatoxins and elemental impurity testing are recommended to ensure quality and safety.	analysis are essential to ensure safety and batch-to-batch consistency
Special precautions	Use cautiously in patients with severe diarrhoea, dehydration or known hypersensitivity to any constituent. Long-term use should be under professional supervision.	Should be used only under qualified Ayurvedic supervision because of the presence of mineral ingredients; caution is advised during pregnancy, lactation and in patients with renal or hepatic disorders unless prescribed by a physician
Overall safety assessment	Current preclinical and clinical evidence suggests a favourable safety profile when used at recommended therapeutic doses and manufactured according to pharmacopeial standards	Traditional use supports its therapeutic application; however, modern toxicological evidence for the finished formulation is limited. Additional GLP-compliant toxicity studies and long-term clinical safety evaluations are warranted.

FUTURE PERSPECTIVES

Despite their extensive use in Ayurveda for the treatment of Amlapitta and associated gastrointestinal diseases, Avipattikar Churna and Sutshekhar Rasa need further scientific clarification. It is recommended that future studies focus on carefully designed preclinical experiments and multicentre randomized-controlled trials that explore the efficacy and safety of Avipattikar Churna and Sutshekhar Rasa. Particular care should be taken in conducting such trials for Sutshekhar Rasa, as the number of preclinical and clinical toxicity studies conducted on the finished product is limited. [5,6,17-19,23,24]

It is also recommended that future research into the pharmacological properties of Avipattikar Churna and Sutshekhar Rasa focus on proper quality control of the manufactured products according to standardized procedures and pharmacopoeial regulations. Further research is also needed that compares the therapeutic effects of both formulations under similar conditions. Moreover, pharmacovigilance and toxicology studies will be required to determine the long-term effects and safety profile of Avipattikar Churna and Sutshekhar Rasa. [13-19,23,24]

CONCLUSION

Avipattikar Churna and Sutshekhar Rasa are among the most commonly prescribed classical Ayurvedic formulations for the management of Amlapitta and related acid-peptic disorders. This review aimed to compare these two formulations based on their classical literature, Ayurvedic principles, pharmacological actions, mechanisms of action, clinical and experimental evidence, and toxicological aspects. Avipattikar Churna and Sutshekhar Rasa are both used for the management of Amlapitta and related acid-peptic disorders, but they differ in many ways. Avipattikar Churna: A Review and Comparative Evaluation of Avipattikar Churna and Sutshekhar Rasa for Management of Amlapitta and Related Acid Peptic Disorders. [1-7,8-12,20-24]

Avipattikar Churna is a polyherbal formulation, whereas Sutshekhar Rasa is a herbo-mineral formulation. Both the formulations seem to possess a significant role in the management of Amlapitta and related acid-peptic disorders. Avipattikar Churna has been subjected to more number of pharmacological, mechanism-based and experimental studies when compared to Sutshekhar Rasa. The results of these studies revealed the gastroprotective effect of Avipattikar



Churna through various mechanisms of action including antisecretory, antioxidant, anti-inflammatory and mucosal protective effects. Although Sutshekhar Rasa also appeared to possess a significant therapeutic role in the management of acid-peptic disorders; however, it has not been subjected to extensive research studies. Both the formulations appear to be safe if prepared as per standards of Ayurvedic Pharmacopoeia of India and used appropriately. However, toxicological, quality control and pharmacovigilance studies including those on the final preparation of Sutshekhar Rasa are required. In summary, this review highlights the necessity of blending classical and contemporary approaches to understand and develop these formulations further. Therefore, there is a need to conduct studies for phytochemical analysis, pharmacological screening, mechanism-based studies, and clinical trials to explore their potential in the management of Amlapitta and related acid-peptic disorders. Likewise, phytochemical and analytical standardization of the two formulations using advanced techniques like Liquid Chromatography-Mass Spectrometry (LC-MS) would help understand the formulation better. There is a dire need of mechanism-based and multicenter clinical trials for Avipattikar Churna and Sutshekhar Rasa for providing strong evidence for its efficacy and safety. [13-19,25-30,39,40]

REFERENCES

1. Almadi MA, Lu Y, Alali AA, Barkun AN. Peptic ulcer disease. *Lancet*. 2024;404(10447):68-81.
2. Vakil N. Peptic ulcer disease: a review. *JAMA*. 2024;332(21):1832-1842.
3. Lanas A, Chan FK. Peptic ulcer disease. *Lancet*. 2017;390(10094):613-624.
4. Moayyedi P, Lacy BE, Andrews CN, Enns RA, Howden CW, Vakil N. ACG and CAG clinical guideline: management of dyspepsia. *Am J Gastroenterol*. 2017;112(7):988-1013.
5. Chey WD, Howden CW, Moss SF, Morgan DR, Greer KB, Grover S, et al. ACG Clinical Guideline: treatment of *Helicobacter pylori* infection. *Am J Gastroenterol*. 2024;119(9):1730-1753.
6. Malfertheiner P, Megraud F, Rokkas T, Gisbert JP, Liou JM, Schulz C, et al. Management of *Helicobacter pylori* infection: the Maastricht VI/Florence consensus report. *Gut*. 2022;71(9):1724-1762.
7. Laine L, Barkun AN, Saltzman JR, Martel M, Leontiadis GI. ACG Clinical Guideline: upper gastrointestinal and ulcer bleeding. *Am J Gastroenterol*. 2021;116(5):899-917.
8. Gyawali S, Khan GM, Lamichane S, Gautam J, Ghimire S, Adhikari R, et al. Evaluation of anti-secretory and anti-ulcerogenic activities of Avipattikar Churna on peptic ulcers in experimental rats. *J Clin Diagn Res*. 2013;7(6):1135-1139.
9. Chandra P, Sachan N, Gangwar AK, Sharma PK. Comparative study of mineralo-herbal drugs (Kamadugha and Sutshekhar Rasa Sada) on gastric ulcer in experimental rats. *J Pharm Res*. 2010;3(7):1659-1662.
10. Mishra P, Hadimur K, Patil KA, Baragi PC. Anti ulcer activity of Sutashekhar Rasa in albino rats by drugs induced module. *Eur J Biomed Pharm Sci*. 2019;6(3):215-219.
11. Chauhan G, Mahapatra AK, Kapoor A, Kumar A. Study on clinical efficacy of Avipattikar Choorna and Sutashekhar Rasa in the management of Urdhwaga Amlapitta. *J Pharm Sci Innov*. 2015;4(1):11-15.
12. Paradkar HS, Gaikar Y, Patait V. A retrospective study on the usage of Sootashekhar Rasa in an Ayurvedic hospital in 250 cases. *Ayurline Int J Res Indian Med*. 2017;1(2):110-113. doi:10.52482/ayurline.v1i02.66.
13. Ram HN Aswatha, Kaushik U, Lachake P, Shreedhara CS. Standardisation of Avipattikar Churna: a polyherbal formulation. *Pharmacogn Res*. 2009;1(4):224-227.
14. Patil S, Shah S. Preparation, quality control and stability studies of Avipattikar Churna. *J Drug Deliv Ther*. 2019;9(3-s):531-536.



15. Dixit VK, Irchhaiya R, Gupta R, Singh N, Arjariya A. Standardization parameters for herbal formulation, Avipattikar Churnam. *J Drug Deliv Ther.* 2019;9(4):579-584.
16. Meena AK, Rekha PD, Poorna V, Jayarega V, Swathi KN, Ilavarasan R. Standardisation and HPTLC fingerprint profile of poly herbal churna, an Ayurvedic formulation. *Res J Pharm Technol.* 2020;13(3):1361-1367.
17. Parasuraman S, Thing GS, Dhanaraj SA. Polyherbal formulation: concept of Ayurveda. *Pharmacogn Rev.* 2014;8(16):73-80.
18. Government of India, Ministry of Health and Family Welfare, Department of AYUSH. The Ayurvedic Formulary of India. Part I. 2nd ed. New Delhi: Government of India; 2003.
19. Government of India, Ministry of Health and Family Welfare, Department of AYUSH. The Ayurvedic Pharmacopoeia of India. Part II. New Delhi: Government of India; 2008.
20. Shastri K, editor. Bhaisajya Ratnavali of Govind Das Sen. Varanasi: Chaukhamba Sanskrit Sansthan; 1998.
21. Shastri L, editor. Yogaratnakara. Varanasi: Chaukhamba Sanskrit Sansthan; 2009.
22. Satyapal B, editor. Kashyapa Samhita with Vidyotini Hindi commentary. Varanasi: Chaukhamba Sanskrit Sansthan; 2004.
23. World Health Organization. Quality control methods for medicinal plant materials. Geneva: World Health Organization; 1998.
24. World Health Organization. WHO guidelines for assessing quality of herbal medicines with reference to contaminants and residues. Geneva: World Health Organization; 2007.
25. Ernst E. Heavy metals in traditional Indian remedies. *Eur J Clin Pharmacol.* 2002;57(12):891-896.
26. Saper RB, Kales SN, Paquin J, Burns MJ, Eisenberg DM, Davis RB, et al. Heavy metal content of Ayurvedic herbal medicine products. *JAMA.* 2004;292(23):2868-2873.
27. Saper RB, Phillips RS, Sehgal A, Khouri N, Davis RB, Paquin J, et al. Lead, mercury, and arsenic in US- and Indian-manufactured Ayurvedic medicines sold via the Internet. *JAMA.* 2008;300(8):915-923.
28. Eusebi LH, Rabitti S, Artesiani ML, Gelli D, Montagnani M, Zagari RM, et al. Proton pump inhibitors: risks of long-term use. *J Gastroenterol Hepatol.* 2017;32(7):1295-1302.
29. Islam MM, Poly TN, Walther BA, Dubey NK, Ningrum DNA, Shabbir SA, et al. Adverse outcomes of long-term use of proton pump inhibitors: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol.* 2018;30(12):1395-1405.
30. Maideen NMP. Adverse effects associated with long-term use of proton pump inhibitors. *Chonnam Med J.* 2023;59(2):115-127.
31. Slomiany BL, Slomiany A. Role of mucus in gastric mucosal protection. *J Physiol Pharmacol.* 1991;42(2):147-161.
32. Flemström G, Turnberg LA. Gastroduodenal defence mechanisms. *Clin Gastroenterol.* 1984;13(2):327-354.
33. Højgaard L, Mertz-Nielsen A, Rune SJ. Peptic ulcer pathophysiology: acid, bicarbonate, and mucosal function. *Scand J Gastroenterol Suppl.* 1996;216:10-15.
34. Johansson C, Aly A, Befrits R, Smedfors B, Uribe A. Protection of the gastroduodenal mucosa by prostaglandins. *Scand J Gastroenterol Suppl.* 1985;110:41-48.
35. Wallace JL, Granger DN. The cellular and molecular basis of gastric mucosal defense. *FASEB J.* 1996;10(7):731-740.
36. Takeuchi K. Pathogenesis of NSAID-induced gastric damage: importance of cyclooxygenase inhibition and gastric hypermotility. *World J Gastroenterol.* 2012;18(18):2147-2160.
37. Yoshikawa T, Naito Y. The role of neutrophils and inflammation in gastric mucosal injury. *Free Radic Res.* 2000;33(6):785-794.
38. Tulassay Z, Herszényi L. Gastric mucosal defense and cytoprotection. *Best Pract Res Clin Gastroenterol.* 2010;24(2):99-108.
39. Ardalani H, Hadipanah A, Sahebkar A. Medicinal plants in the treatment of peptic ulcer disease: a review. *Mini Rev Med Chem.* 2020;20(8):662-702.



40. Roy AJ, Maut C, Gogoi HK, Ahmed SI, Kashyap A. A review on herbal drugs used in the treatment of peptic ulcer. *Curr Drug Discov Technol.* 2023;20(3):e121222211869.

HOW TO CITE: Shilpa Jayakumar, Aiswarya Lakshmi T, Reshma Devasia, Comparative Review of Avipattikar Churna and Sutshekhar Rasa in the Management of Acid-Peptic Disorders: Current Evidence and Future Perspective, *Int. J. of Pharm. Sci.*, 2026, Vol 4, Issue 10, 664-676. <https://doi.org/10.5281/zenodo.23169552>

