ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Review Article

A CRITICAL REVIEW ON *AVIPATHI CHOORNA*- A UNIQUE FORMULATION FOR PEPTIC ULCER DISEASE

Subha K Nampoothiri[1]*, A Shahul Hameed[2]

*[1]PG Scholar, [2]Professor & HOD, Department of Dravyagunavijnanam, Govt. Ayurveda College, Thiruvananthapuram, Kerala, India.

Article info

Article History:
Received: 28-08-2021
Revised : 13-09-2021
Accepted: 18-09-2021
Published: 16-09-2021

KEYWORDS:
Avipathi choorna, *Deepana*, *Pachana*, *Parinamasoola*, Peptic ulcer.

ABSTRACT

Peptic-ulcer-disease is the ulceration of gasrtric or duodenal mucosa due to the digestive action of pepsin and stomach acid. Gastritis, gastric ulcer and duodenal ulcer are included under this. It can be correlated with the condition *Parinamasoola* mentioned in Ayurveda. *Avipathichoornam* is a famous Ayurvedic formulation, mentioned in the texts *Ashtanga Hridaya* and *Sahasrayoga*. *Avipathi choorna* exerts its effect in Peptic ulcer disease probably through *Deepana, Pachana* and *Saraka* actions by virtue of the pharmacological properties of the ingredients with which the vitiated *Pitta* can get normalized. It can be deducted that *Avipathi choorna* probably neutralize the excess acid secretion in the gastrointestinal tract and maintain a healthy pH. The formulation also probably acts by the anti inflammatory property of most of the ingredients which can help pacify the inflamed tissue layer of the gut. The aim of this paper is to demonstrate mode of action of *Avipathi choorna* in peptic ulcer disease by critically analyzing the pharmacological properties as well as chemical constituent of the ingredients.

INTRODUCTION

Peptic ulcer is one of the most prevalent chronic gastrointestinal disorders. It refers to an ulcer in the mucosa of lower oesophagus, stomach or the intestine. The ulceration results when the aggressive factors such as acid, pepsin, bile or Helicobacter pylori overwhelm the defensive factors of the gastrointestinal mucosa such as mucous and bicarbonate secretions, prostaglandins and nitric oxide. It affects 8-10% of the global population.[1]

Peptic-ulcer disease includes many conditions like gastritis, gastric ulcer and duodenal ulcer. The cardinal feature of peptic ulcer disease is sharp and burning epigastric pain, which may be ill defined and often aggravated by meals or relieved few minutes after a meal. Other associated symptoms include nausea, vomiting, flatulence, abdominal distention, water brash etc.[2] It can be compared to the disease *Parinamasoola* mentioned in Ayurveda.

Access this article online

Quick Response Code

https://doi.org/10.47070/ijapr.v9i9.2038

Parinama shoola is characterised by burning sensation along with pain in epigastrium during the digestion of ingested food.

The disease *Parinama shoola* was first mentioned by Acharya Madhava in his treatise on etiopathology of diseases. Though it is a *Pitta* predominant disease, there is involvement of the other two *Doshas* in its etiopathogenesis. *Pitta (Pachaka pitta)* gets vitiated, *Kapha* (*Kledaka kapha*) gets vitiated, dislodged and gets combined with deranged *Vata (Samana vayu)*, and precipitates *Parinamasoola*.[3]

There is a scope for introduction of a safe alternative to the present day anti ulcer drugs. *Avipathi choorna*, a poly herbal Ayurvedic formulation, is mentioned in the texts *Sahasrayoga* and *Ashtanga hridaya*.[4,5] It is a popular medicine with multiple indications. This medicine has been used by the Ayurvedic practitioners for the management of peptic ulcer disease. Ingredients of *Avipathi choorna* are economical, safe and are easily available.

The principle of management of *Parinama shoola* is amelioration of the provoked *Vata*, alleviation of provoked *Pitta* and reinstation of *Kapha*. *Virechana* (Purgation) is the main treatment in *Parinamasoola.*[6] *Virechana* is useful in disorders in which *Pitta* is associated with *Kapha. Avipathi choorna* is mainly

indicated in diseases of *Pitta* predominance in lower doses as *Samana* (alleviating) and in higher doses as *Virechana* (purgation) medication.

Avipathi choorna

The name *Avipathi* literally means that which is not harmful. The drugs included in the formulation are *Sunthi*:- dried rhizome of *Zingiber officinale*, *Maricha*- fruit of *Piper nigrum*, *Pippali*- fruit of *Piper longum, Twak*- bark of *Cinnamomum zeylanicum, Ela*- seeds of *Eletteria cardomomum*, *Patra*- leaves of *Cinnamomum tamalaum*, *Musta*- tubers of *Cyperus rotundus*, *Vidanga*- seeds of *Embelia ribes*, *Amalaki*- fruit rind of *Embilica officinalis*- 1 part each, *Trivrit*- root of *Operculina turpethum*- 9 parts and *Sita* (Candy sugar) -18 parts. Honey is given as vehicle.[5] The dose is 12gm in divided doses after food. The dose for purgation is 12gm-48gm, given as a single dose after the digestion of last meal.[7] More over Charaka has included three of the above drugs, *Pippali, Sunthi* and *Maricha* in *Soolahara* (abdominal pain relievers) group.[8]

METHODOLOGY

A detailed critical review was carried out in all available literature as classical Ayurvedic books and online databases. Review mainly focused on pharmacological properties of each ingredient as per Ayurvedic perspective and that of their chemical constituents in modern perspective.

RESULTS AND DISCUSSSION

Pharmacological Profile as per Ayurveda

Pharmacological profile of a drug according to Ayurveda includes their properties as *Rasa, Guna, Veerya, Vipaka* and its effect (*Karma*). The Pharmacological profile of the ingredients of *Avipathi choorna* are analysed and depicted in the following table:

Table: 1 Pharmacological Actions as per Ayurveda

Sanskrit Name	*Rasa*	*Guna*	*Veerya*	*Vipaka*	*Karma*
Sunthi	*Katu*	*Laghu* *Snigdha*	*Ushna*	*Madhura*	*Vatakaphahara* *Deepana Pachana,* *Soolahara*[9]
Maricham	*Katu*	*Laghu* *Rooksha* *Teekshna*	*Ushna*	*Katu*	*Vatakaphahara Deepana* *Soolahara* [10]
Pippali	*Katu*	*Laghu* *Snigdha*	*Anushna*	*Madhura*	*Vatakaphahara Deepana* *Soolahara* [11]
Twak	*Katu* *Tikta* *Madhura*	*Laghu* *Teekshna*	*Ushna*	*Katu*	*Vatakaphahara* *Deepana Pachana* [12]
Patra	*Katu* *Madhura*	*Laghu* *Snigdha* *Pichila*	*Ushna*	*Katu*	*Kaphavatahara* [13]
Ela	*Katu* *Madhura*	*Laghu*	*Sita*	*Madhura*	*Kaphavatahara* [14]
Musta	*Tikta* *Katu* *Kashaya*	*Laghu* *Rooksha*	*Sita*	*Katu*	*Kaphapittahara* *Deepana Pachana* [15]
Vidanga	*Katu* *Kashaya*	*Laghu* *Rooksha* *Teekshna*	*Ushna*	*Katu*	*Kaphahara* *Krimighna* *Deepana* *Soolahara* [16]
Amalaki	*Amla, katu* *Kashaya* *Tikta* *Madhura*	*Laghu* *Rooksha*	*Sita*	*Madhura*	*Tridoshahara* *Deepana* [17]
Trivrit	*Madhura* *Katu*	*Laghu* *Rooksha*	*Ushna*	*Katu*	*Kaphapittahara* *Rechana*

	Tikta Kashaya	*Teekshna*			*Vranahara* [18]
Sita	*Madhura*	*Guru Snigdha Sita*	*Sita*	*Madhura*	*Rakthapittahara* [19]
Madhu	*Madhura Kashaya anurasa*	*Laghu Rooksha*	*Sita*	*Madhura*	*Kaphapittahara Deepana Vranaropana Sandhana* [20]

Pharmacological Actions- Modern view

In modern view, phytoconstituents are responsible for the pharmacological effects of a herbal drug. The important phytoconstituents of each ingredients of *Avipathi Choorna* and their pharmacological actions are analyzed and shown in the table below:

Table 2: Pharmacological Actions- Modern View

Sanskrit Name	English/Scientific name and Family	Chemical constituents	Reported Pharmacological actions
Sunthi	*Zingiber Officinale* Roscoe. Zingiberaceae	Zingerone Gingerol Flavonoids	Anti-oxidant Anti-inflammatory[21] Gastroprotective [22]
Maricham	*Piper nigrum* Linn. Piperaceae	Piperine Piperidine Flavonoids	Appetiser Anti -inflammatory Antacid, stimulant Digestive [21]
Pippali	*Piper longum* Linn. Piperaceae	Piperine Zingiberene Flavonoids	Anti-inflammatory Anti-oxidant Anti-microbial Analgesic [23]
Twak	*Cinnamomum Zeylanicum* Blume. Lauraceae	Tannin CinnamaldehydeFlavonoids	Anti-inflammatory [24] Gastroprotective [25]
Patra	*Cinnamomum tamala* Demot. Lauraceae	Cinnamaldehyde Flavonoids	Anti-oxidant [26] Gastroprotective [27]
Ela	*Eletteria cardamomum* Maton Scitaminae	Volatile oil	Anti-inflammatory Analgesic Antioxidant Gastroprotective [28]
Musta	*Cyperus rotundus* Linn. Cyperaceae	Flavonoids Cineol, tannins	Antibacterial Anti-inflammatory Analgesic Gastroprotective [29]
Vidanga	*Embelia ribes* Burn. F. Primulaceae	Tannin Volatile oil	Analgesic Anti-inflammatory [30] Antioxidant Anthelminthic Wound healing [31]
Amalaki	*Emblica officinalis* Gareth. Euphorbaceae	Tannin, saponin Phenolic compounds	Antioxidant Analgesic Anti inflammatory

		Gallicacid	Antiulcer Gastro-protective [32]
Trivrit	*Operculina turpethum* Linn. Convolvulaceae	Scopoletin Tannins Saponins Turpethin	Antibacterial Anti-inflammatory Analgesic[33] Ulcer protective [34]
Sita	Candy sugar	Flavonoids	Anti-oxidant Energy booster [35]
Madhu	Honey	Phenol, Saponins Flavonoids Tannin	Anti-oxidant Antimicrobial Anti-bacterial Wound healing [36]

Most of the drugs in *Avipathi choorna* possess anti-inflammatory, anti-oxidant and gastroprotective properties. Experimental studies also reveal the antiulcer and gastoprotective effects of some ingredients and that of the formulation *Avipathichoorna.*[37]

DISCUSSION

Peptic ulcer

In the modern aspect, etiolgy of Peptic ulcer include over production of gastric acid and decreased secretions of protective gastric mucosa which leads to symptoms of peptic ulcer disease and consequently the erosion of mucosa. So the main aim of the treatment is to heal the ulcer, relieve pain, prevent complications and relapse.

Parinamasola

The Peptic ulcer disease is comparable with pathological condition named *Parinamasoola* in Ayurveda. The etiopathogenesis of *Parinamasoola*, involves all the three *Doshas* (*Vata, Pitta* and *Kapha)*. So the line of treatment is the amelioration of the provoked *Vata*, alleviation of provoked *Pitta* and reinstation of *Kapha*. The disease occurs in the *Mahasrothas* (digestive tract) and there is derangement of *Agni*. Therefore the drug chosen should be having *Deepana* (improves appetite), and *Pachana* (improves digestion) property, which is essential for eliminating the root cause of the disease.

Mode of action of *Avipathichoorna*

Ayurvedic view

Avipathichoorna, is a classical formulation which can be of promising effect in the management of *Parinamasoola*. Among the ingredients, *Twak, Patra, Ela, Vidanga, Maricha* and *Sita* have capability to ameliorate *V*ata. *Trivrit, Musta, Sita* and *Amalaki* have capability to alleviate *Pitta. Musta, Twak, Patra, Ela, Sunthi, Maricha, Pippali*, *Trivrit* and *Madhu* are capable of normalising *Kapha* and reinstating it. *Sunthi, Maricha, Pippali, Musta, Amalaki, Madhu, Twak, Patra, Ela and Vidanga* can improve *Agni* (digestants). *Madhu* is also having *Vranaropana* (wound healing) property, which probably aids in healing ulcer. *Amalaki* is *Rasayana* and can strengthen the tissues. The dosage form *Choorna* (powder) can also have a physical effect of adsorption there by reducing excessive *Dravatha* of *Pitta.* Moreover inclusion of *Pippali, Sunthi and Maricha* in the *Soolaprasamana group* by Charaka further supports the claimed effect of the formulation in this disease. Thus it can be assumed that *Avipathi choorna* mainly acts by its *Deepana, Pachana* and *Saraka guna* which normalizes the vitiated *Pitta.*

Modern Pharmacological Action

Trivrit, one of the main ingredients of the formulation, increases the mucous secretion. Scopoletin present in *Trivrit* helps to reduce acidity. Tannins are reported in *Trivrit, Twak, Vidanga, Musta*, *Amalaki* and honey. Tannin is effective against Helicobacter pylori. Tannins also exhibit antioxidant action and also aids in gastrointestinal tract anti-inflammatory processes. Flavonoids, reported to be present in *Sunthi, Pippali, Maricha, Twak, Patra, Musta, Sita* and honey, are highly gastroprotective by increasing the mucosal prostaglandin levels and inhibiting the release of histamine.

Piperine present in *Maricha* and *Pippali* also exert cytoprotective effects on the gastric mucosa. *Sunthi* decreases the gastric secretion, increases the mucosal resistance and potentiates the defensive factors of gastric mucosa. It also increases blood circulation around the stomach and thus aids in healing. *Twak* and *Patra* contain E-cinnamaldehyde and o-methoxy cinnamaldehyde, both of which show anti-inflammatory property. Phenolic compounds in *Amalaki* fruit can reduce acute and chronic inflammatory response via antioxidant action. Also Saponins in *Trivrit, Amalaki* and *Madhu* is having gastroprotective effect by increasing the mucous production. Thus the ingredients of *Avipatti choorna* exhibit antiulcer properties. It can be inferred that the carminative, anti-oxidant and anti-inflammatory property of *Avipathi choorna* aids in normalizing gastric secretions.

Research evidence also reveals the anti-ulcer effects of the ingredients such as *Trivrit*, *Sunthi*, *Pippali*, *Twak, Patra* and also the gastroprotective activity of *Avipathichoorna*. Considering all these aspects it can be assumed that *Avipathichoorna* is a good and safe therapeutic agent for treating Peptic ulcer disease.

CONCLUSION

On analysing the pharmacological properties of each ingredient in the formulation, it can be concluded that *Avipathi Choorna* has promising effect in the management of peptic ulcer disease.

REFERENCES

1. Sung, J. J., Kuipers, E. J., & El-Serag, H. B. Systematic review: The global incidence and prevalence of Peptic ulcer disease. Alimentary pharmacology & therapeutics. 2009; 29(9): 938–946.
2. Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL. Harrison's Principles of Internal Medicine. 17 ed. New York; McGraw Hill; 2005. p.1751.
3. Sri Sudarshan Shastri, Yadunandana Upadhyay. Madhava Nidanam (Madhukosha Sanskrit Commentary). Varanasi; Chaukhambha Prakashan; 2009. p.512.
4. Krishnan Vaidyan K.V, Gopalapillai S. Sahasrayoga, 33rd ed. Alappuzha; Vidyarambham Publishers; 2015. p.163.
5. Dr Kanjiv Lochan. Ashtanga Hridaya of Vagbhata. Varanasi; Chaukhamba Sanskriti Sansthan; 2017. p.495.
6. Laxmipati Shastri, Brahmshankar Shastri. Yoga Ratnakar (Hindi Commentary). Varanasi; Chaukhamba Prakashan; 2009. p.13.
7. Sreekanthamurthy K.R. Sarngadhara samhitha, (English translation). Reprint 2012. Varanasi; Chaukhamba Orientalia; 2009. p.205.
8. Sharma R.K and Bhagwan Dash. Charaka Samhita Sutrasthana text with English translation. Reprint ed. Varanasi; Chowkhambha Sanskrit Series Office; 2018. p.910.
9. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Varanasi; Chaukhambha Krishnadas academy; 2008. p.165
10. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1.Varanasi: Chaukhambha Krishnadas academy; 2008. p.167.
11. Sreekandhamurthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.166.
12. Sreekandhamurthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.216.
13. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1 Varanasi; Chaukhambha Krishnadas academy; 2008. P.217.
14. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1.Varanasi; Chaukhambha Krishnadas academy; 2008. p.216.
15. Sreekandha murthy K.R. Bhavaprakasha (English commentary) Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.220.
16. Dr. Gyanendra Pandey. Dravyaguna vijnana. Vol.-II. Varanasi; Chaukhambha Krishnadas Academy; 2007. p:642.
17. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.164.
18. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.214.
19. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.494-495
20. Sreekandha murthy K.R. Bhavaprakasha (English commentary). Vol.1. Varanasi; Chaukhambha Krishnadas academy; 2008. p.485- p.489.
21. Chithra.M.S Pooja.P, K. Unnikrishna Pillai, Ramesh N.V, Abhaya Kumar Mishra. Multi-dimensional action of Trikatu. AAMJ. 2016; 2(1): 17-18.
22. Al-Yahya MA, Rafatullah S, Mossa JS, Ageel AM, Parmar NS, Tariq M. Gastroprotective activity of ginger- zingiber officinale rosc., in albino rats. Am J Chin Med. 1989; 17(1-2): 51-56.
23. Agrawal AK, Rao CV, Sairam K, Joshi VK, Goel RK. Effect of Piper longum Linn, Zingiber officianalis Linn and Ferula species on gastric ulceration and secretion in rats. Indian J Exp Biol. 2000; 38(10): 994-8.
24. Ranasinghe, Priyanga, Shehani, Sirimal, Galapathy. Medicinal properties of true cinnamon (Cinnamomum zeylanicum): A systematic review. BMC complementary and alternative medicine. 2013; 10(3): 32-34.
25. Mohammed Asad, Antiulcer Effect of Cinnamomum zeylanicum Bark in Rats. Research Journal of Biological Sciences. 2014; 3(9): 182-187.
26. Mehta, Seema & Purohit, Vijay & Andola, Harish. Pharmacological Activities of Cinnamomum tamala Nees & Eberm. and Medical Implication: A Review. Medicinal & Aromatic Plants. 2014; 2(4): 12-13.
27. Eswaran MB, Surendran S, Vijayakumar M, Ojha SK, Rawat AK. Gastroprotective activity of Cinnamomum tamala leaves on experimental gastric ulcers in rats. J Ethnopharmacol. 2010; 128(2): 537-40.
28. Korikanthimathm, V.S & Prasath, D. & Rao. Govardhana. Medicinal properties of Elettaria cardamomum. J Med Aromat Plant Sci. 2001; 1(2): 22-23.

29. Meena A.K, Yadav A K, Niranjan U S, Singh B, Nagariya A K. Review on Cyperus rotundus- A potential Herb. Int J Pharmcaeut Clin Res. 2010; 2(1): 20-22.
30. Bist, Meenu & Prasad, Dr. Shyam. Embelia ribes: A valuable medicinal plant. Journal of Chemical and Pharmaceutical Research. 2016; 4(2): 1229-1233.
31. Srinath Ambati, Jyothi.V and Asha Jyothi.V. Pharmacological, pharmacognostic and phytochemical review of Embelia ribes. IJPT. 2010; 3(2): 525- 539.
32. Al-Rehaily, A. J., Al-Howiriny, T. A., Al-Sohaibani, M. O., & Rafatullah, S. (2002). Gastroprotective effects of 'Amla' Emblica officinalis on in vivo test models in rats. Phytomedicine: International journal of phytotherapy and phytopharmacology. 9(6): 515–522.
33. Kolhe, Rasika & Acharya, Rabinarayan. Trivrit and Its Important in the Classical Text of Ayurveda: A Comprehensive Review. Research and Reviews: Journal of Ayurvedic Science, Yoga and Naturopathy. 2014; 4(3): 33-53.
34. Vidya Ignatius, Madhusudan Narayan, Venkataraman, Antiulcer activity of Indigenous plant Operculina turpethum Linn. Evidence based Complementary and Alternative medicine. 2013; 5(3):14-16.
35. Singh A, Lal UR, Mukhtar HM, Singh PS, Shah G, Dhawan RK. Phytochemical profile of sugarcane and its potential health aspects. Pharmacognosy Rev. 2015; 9(17): 45-54.
36. Saranraj, P. & Sivasakthi, S & Feliciano, Glaucio. Pharmacology of Honey: A Review. Biological research. 2016; 2(4): 271-289.
37. D. Benito Johnson, C. Senthil Kumar, C. Glince Raphael, R. Venkatnarayanan and Siraj Kattupparuthi. Gastroprotective Activity of Avipathi Choornam. Research Journal of Pharmacognosy and Phytochemistry. 2013; 5(1): 37-41.

Cite this article as:
Subha K Nampoothiri, A Shahul Hameed. A Critical Review on Avipathi Choorna- A Unique Formulation For Peptic Ulcer Disease. International Journal of Ayurveda and Pharma Research. 2021;9(9):80-85.
https://doi.org/10.47070/ijapr.v9i9.2038
Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**
Dr. Subha K Nampoothiri
PG Scholar,
Dept of Dravyagunavijnanam,
Govt. Ayurveda College,
Thiruvananthapuram,
Kerala, India.
Email:
subhanamboothiri@gmail.com
Mobile: 9446511932