

A COMPARATIVE STUDY OF BENINCASA HISPIDA AND PPI (PROTON PUMP INHIBITOR) FOR THE TREATMENT OF ACIDIC DISORDERS

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ABSTRACT

This paper aims to present a comparative study of Ayurvedic and Western medicine for the treatment of digestive disorders. Digestive disorders are prevalent in both the East and the West, and many people rely on various traditional medicine practices to alleviate their symptoms. Ayurvedic medicine, a system of traditional medicine that originated in India and Western medicine, which is widely practiced in Western countries both have their unique approaches to diagnosing and treating digestive disorders. This study will compare the two systems of medicine in terms of their approach to diagnose digestive disorders the types of treatments they prescribe and their effectiveness in treating various digestive disorders.^[1]

INTRODUCTION

Digestive disorders are common health problems that affect millions of people worldwide. In Ayurvedic medicine, digestive disorders are believed to be caused by an imbalance in the three doshas (Vata, Pitta, and Kapha),^[2] which are the fundamental energies that govern the

body's functions. In Western medicine, digestive disorders are often attributed to factors such as diet, lifestyle and environmental factors. Both Ayurvedic and Western medicine offer various treatments for digestive disorders ranging from dietary changes to medications and surgical procedures. However, these two systems of medicine have different approaches to diagnosing and treating digestive disorders.

Approach to diagnosis digestive disorders

In Ayurvedic medicine, the diagnosis of digestive disorders is based on an analysis of the patient's symptoms, medical history and constitution. The practitioner will determine the patient's dosha type and then identify any imbalances that may be contributing to their digestive problems.^[11] This approach to diagnosis is highly personalized and considers the patient's unique characteristics and circumstances.

In Western medicine, the diagnosis of digestive disorders is typically based on a combination of medical history, physical examination and diagnostic tests. Medical history and physical examination are used to identify any signs or symptoms of digestive problems and diagnostic tests such as blood tests, stool tests and imaging studies may be ordered to confirm the diagnosis. Types of Treatments Prescribed.

In Ayurvedic medicine, the treatment of digestive disorders involves a combination of dietary changes, lifestyle modifications and herbal remedies. The practitioner will prescribe a diet that is specific to the patient's Dosha type and may recommend herbs and supplements to help balance the Doshas and alleviate digestive symptoms. Ayurvedic practitioners may also recommend various practices such as yoga and meditation to help reduce stress and promote overall well-being.

In Western medicine, the treatment of digestive disorders varies depending on the underlying condition. Common treatments include medications such as antacids, proton pump inhibitors and antibiotics. In some cases, surgical intervention may be necessary to treat underlying conditions such as ulcers, hernias or cancer. Effectiveness in Treating Digestive Disorders.^[3]

Several studies have compared the effectiveness of Ayurvedic and Western medicine in treating digestive disorders. One study conducted in India found that Ayurvedic treatment was effective in reducing symptoms of irritable bowel syndrome (IBS) and improving overall quality of life in patients with the condition. Another study conducted in the United States

found that acupuncture, a practice often used in conjunction with Ayurvedic medicine, was effective in reducing symptoms of acid reflux disease. In Western medicine.^[4] the effectiveness of treatments for digestive disorders varies depending on the underlying condition. For example, medications such as proton pump inhibitors are effective in reducing symptoms of acid reflux disease, while surgical intervention may be necessary to treat conditions such as pancreatic cancer.

Comparative study of PPI (Proton pump inhibitor) and *Benincasa hispida*

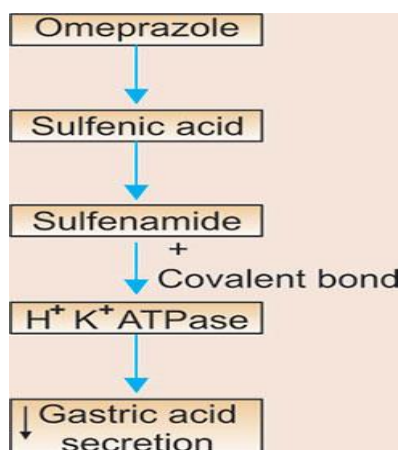
Both proton pump inhibitors (PPIs) and *Benincasa hispida* have been used to treat acid gastric issues, but they work in different ways and have different effects on the body.

PPIs are a class of drugs that work by inhibiting the action of the proton pump in the stomach, which is responsible for the production of stomach acid. By reducing the amount of acid produced, PPIs can help to relieve symptoms of acid reflux and ulcers.^[5]

Examples of PPIs include omeprazole, lansoprazole, and esomeprazole.

Mode of action of PPI

Proton pump inhibitors (PPIs) effectively block gastric acid secretion by irreversibly binding to and inhibiting the hydrogen-potassium ATPase pump that resides on the luminal surface of the parietal cell membrane. Proton-pump inhibitors (PPIs)^[6] are a class of medications that cause a profound and prolonged reduction of stomach acid production. They do so by irreversibly inhibiting the stomach's H⁺/K⁺ ATPase proton pump. They are the most potent inhibitors of acid secretion available. Proton-pump inhibitors have largely superseded the H₂-receptor antagonists, a group of medications with similar effects but a different mode of action, and antacid.^[7]



Ayurvedic properties of *benincasa hispida*

The properties of the fruit of *B. hispida* change according to stages of ripening. The tender fruits alleviate Pitta Dosha, medium ripened fruit alleviates Kapha Dosha and ripened fruits alleviate all three Dosha. According to Ayurveda, its properties are given below.

- Rasa (Taste): Madhura (Sweet)
- Guna (Qualities): Laghu (Lightness), Snigdha (Unctuous)
- Veerya (Potency): Sheeta (Cold)
- Vipaka (Post-digestive effect): Madura (Sweet)
- Prabhava (Special potency): Nervine tonic
- Dosha Karma (Actions): Vata-Pitta Shamaka

Mode of action according to ayurveda

According to Ayurveda, the taste of a substance have an impact on the Doshas. *Benincasa hispida* is known for its sweet taste, which is said to reduce the sour taste of Pitta. This means that it can be beneficial for individuals with Pitta-related conditions such as acidity, heartburn, and ulcers.

Additionally, *Benincasa hispida* has a cold potency, which reduces the hot potency of Pitta. This can help to balance Pitta in individuals who have an excess of this Dosha, leading to symptoms such as inflammation, fever, and skin rashes.

The post-digestive effect, or "Vipaka," of *Benincasa hispida* [is also said to be sweet, which reduces the sharp post-digestive effect of Pitta. This means that it can be helpful for individuals with Pitta-related digestive issues such as diarrhea, irritable bowel syndrome (IBS), and inflammatory bowel disease (IBD).

Benincasa hispida is also believed to have an effect on the nerves, which can inhibit the activation of acid secretion. This can be beneficial for individuals with hyperacidity and other Pitta-related digestive issues.

Furthermore, the qualities of *Benincasa hispida* are said to be light and unctuous, which reduces the sharp quality of Pitta. This means that it can be helpful for individuals with Pitta-related conditions such as anger, irritability and impatience.

Overall, *Benincasa hispida* is considered to have a Vata-Pitta shamaka action on Doshas, which means that it pacifies and balances the Vata and Pitta Doshas. This makes it a useful herb for individuals who have an imbalance in these Doshas, leading to a wide range of physical and mental health issues.

Pharmacological action of *benincasa hispida*

Banincasa hispida, also known as winter melon or ash gourd, is a fruit that has traditionally been used in Ayurvedic medicine to treat a variety of conditions, including digestive issues. It is rich in fiber, antioxidants and other beneficial compounds that are thought to help reduce inflammation and protect the digestive system.

There have been limited studies comparing the effectiveness of PPIs and *Benincasa hispida* on acid gastric issues. However, some studies have suggested that *Benincasa hispida* may have anti-inflammatory and anti-ulcer effects in the stomach, which could help to relieve symptoms of acid reflux and ulcers.

One study published in the Journal of Ethnopharmacology found that *Benincasa hispida* extract was able to reduce the production of gastric acid in rats with induced gastric ulcers. Another study published in the Journal of Medicinal Food found that a combination of *Benincasa hispida* and ginger was able to improve symptoms of acid reflux in patients with gastroesophageal reflux disease.^[8] (GERD).

Antiulcer activities of *Benincasa hispida* fruit extract in rats against ethanol-induced gastric mucosal damage, pylorus ligated (PL) gastric ulcers, and cold restraint-stress (CRS)-induced gastric ulcer models. Petroleum ether and methanol extracts were administered orally and omeprazole (standard) was also administered orally. The ulcer index was a common parameter studied across all the models. Additionally vascular permeability was evaluated in the ethanol model and the effect on lipid peroxidation, malondialdehyde (MDA) content, superoxide dismutase (SOD) and catalase (CAT) levels were studied in the CRS model. Both extracts produced a significant reduction in the ulcer index in all the models and the results were comparable with those of the omeprazole-treated group. Further, a significant reduction in vascular permeability was observed. In the CRS model, MDA content was significantly reduced, along with an increase in CAT levels, compared to the control group. Thus, the petroleum ether and methanol extracts of *B. hispida* possess significant antiulcer and inhibitor properties.^[9]

Overall, while PPIs are a commonly used and effective treatment for acid gastric issues, *Benincasa hispida* may offer a natural alternative with potentially fewer side effects. However, more research is needed to fully understand the effectiveness of *Benincasa hispida* and how it compares to PPIs for the treatment of acid gastric issues. As with any treatment, it is important to consult with a healthcare provider before starting a new regimen.

DISCUSSION

Here are seven potential reasons why *Benincasa hispida* (wax gourd) could be considered preferable to proton pump inhibitors (PPIs) for certain purposes:

- 1. Natural:** *Benincasa hispida* is a natural plant-based food, while PPIs are synthetic drugs. Some people may prefer to use natural remedies when possible.
- 2. Nutritious:** *Benincasa hispida* is rich in nutrients like vitamin C, vitamin B6, and potassium, while PPIs have no nutritional value.^[10]
- 3. Antacid properties:** *Benincasa hispida* has traditionally been used in Ayurvedic medicine as an antacid, which means it may be able to help reduce symptoms of heartburn and acid reflux without the need for drugs like PPIs. *Benincasa hispida* reduces the sour taste of Pitta due to its sweet nature, and its cooling potency reduces the hot potency of Pitta. Due to its sweet post-digestive effect, it reduces the sharp post-digestive effect of Pitta. Its effect on the nerves inhibits the activation of acid secretion. Its qualities are light and unctuous, which reduces the sharp quality of Pitta. Therefore, its Dosha action is Vata-Pitta shamaka, and it pacifies Pitta.^[11] "
- 4. Low risk of side effects:** While *Benincasa hispida* is generally considered safe when consumed in reasonable amounts, PPIs can have side effects like headache, diarrhea, and nausea.
- 5. No risk of drug interactions:** Since *Benincasa hispida* is a food rather than a drug, it does not carry the risk of negative interactions with other medications like PPIs can.
- 6. Affordable:** *Benincasa hispida* is generally an affordable food option, while PPIs can be quite expensive, especially if taken over a long period of time.
- 7. Culinary versatility:** *Benincasa hispida* can be used in a variety of culinary applications, such as soups, stews, and curries, making it a versatile ingredient in many types of dishes. PPIs, on the other hand, are strictly medicinal and cannot be used in cooking.

CONCLUSION

In conclusion, both Ayurvedic and Western medicine offer various treatments for digestive disorders. Ayurvedic medicine is highly personalized and emphasizes the use of dietary changes, lifestyle modifications, and herbal remedies to balance the doshas and alleviate digestive symptoms. Western medicine, on the other hand, often relies on medications and surgical intervention to treat digestive disorders. While both systems of medicine have their unique approaches to diagnosing and treating digestive disorders, it is essential to consider the effectiveness of the treatments prescribed.

Several studies have shown that Ayurvedic medicine, when practiced correctly, can be effective in reducing symptoms of digestive disorders such as IBS. However, the lack of regulation and standardization of Ayurvedic practices can also lead to potential harm to patients. Western medicine, while often relying on medications and surgical intervention, has undergone rigorous scientific research and is regulated to ensure patient safety.

Therefore, the effectiveness of treatment for digestive disorders depends on the underlying condition, patient characteristics, and practitioner competence. It is essential to have a comprehensive evaluation of the patient's condition and to consider both Ayurvedic and Western medicine treatment options, in conjunction with the patient's preferences, to optimize treatment outcomes.

Future research should focus on comparing the effectiveness of Ayurvedic and Western medicine treatments for specific digestive disorders and identifying potential synergies between the two systems of medicine. Additionally, efforts should be made to ensure that Ayurvedic practitioners are adequately trained and regulated to provide safe and effective treatment to patients.

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