



## Antacids: Is it Advisable to Consume Regularly?

**Chakraborty B\* and Chettri E**

Professor, Department of Chemistry, Sikkim Government College, India

**\*Corresponding author:** Bhaskar Chakraborty, Professor, Department of Chemistry, Sikkim Government College (NBBGC), Gangtok, India, Email: bhaskargtk@yahoo.com

**Received Date:** February 03, 2025; **Published Date:** April 03, 2025

### Abstract

Few case studies have been conducted with the patients suffering from chronic acidity, flatulence and stomach disorder problems with the application of proper inputs of intermediate foods followed by few restrictions in their food habits successfully. Previously these patients were habituated with regular intake of antacids. It has been observed that the patients under study are feeling well without regular applications of various kinds of antacids. So our case studies will open up a new antacid free treatment procedure which may be adopted without any hesitation.

**Keywords:** Chronic Acidity; Flatulence; Stomach Disorder; Intermediate Foods; Antacids

### Abbreviations

LFT: Liver Function Test; PMHS: Polymethylhydrosiloxane; MPS: Methylpolysiloxane.

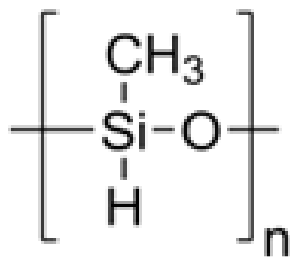
### Introduction

Antacids are a kind of group of medicine that helps us to relieve immediate heartburn, indigestion and flatulence by reducing the amount of acid (hydrochloric acid) secreted in our stomach. The primary role of antacids is to neutralize the acid in our stomach and thereby stopping an enzyme usually pepsin which creates acid for breaking down food items for digestion. Consuming antacid relieve symptoms which cause heartburn, flatulence and indigestion. These include burning sensation in our chest and stomach, especially after eating. It also creates an acidic or sour taste in our mouth. Also symptoms include feeling fullness of stomach or bloated, mild pain in our chest and stomach. In case of chronic problems these symptoms are of regular phenomenon while in a mild case, heartburn and stomach pain happens occasionally or once in a couple of days rather than every day [1].

When a patient with such chronic symptoms visits a doctor (preferably gastroenterologist), he prescribes usually normal antacids approved by "Food and Drug Administration" for treating mild cases of heartburn and indigestion. These medicines may be consumed in an empty stomach for a period of time to overcome the issues concerned. But if the condition persists and continues for a longer period of time, doctors' advice patients to undergo USG (whole abdomen) to see the conditions of stomach, liver and pancreas followed by few important blood tests before advising "Core group of antacids". This core group of antacids helps to combat symptoms of acid reflux also known as "GERD" (gastroesophageal reflux disease), stomach lining inflammation (gastritis), and stomach ulcers. The generic name of this core group of antacids is usually containing hydroxides of Al, Mg and Ca along with simethicone. They work quickly to relieve the symptoms for a few hours and the patients feel good. Though we may use antacids to relieve from GERD related problems but we have to be very careful if our dear ones are on a low sodium diet, pregnant or planning for becoming pregnant. Also, we have to be careful for advising antacids for patients under 12 years old, has

heart disease, high blood pressure and experiencing liver or kidney diseases [2].

The key ingredients of antacids may vary depending upon the type and group. Few common ingredients are aluminium (Al), calcium (Ca) and magnesium (Mg) in the form of hydroxides and carbonates, especially "Aluminium hydroxide, Calcium carbonate, Magnesium carbonate, Magnesium hydroxide and Sodium bicarbonate respectively. Methylpolysiloxane (MPS) is also added in some good quality antacids. Methylpolysiloxane (MPS) is an antifoaming agent. It works by reducing the surface tension of gas bubbles in the stomach and thereby allowing them to combine and develop larger bubbles. This process helps for the gas to be expelled from the digestive system and providing relief from flatulence and discomfort in stomach (Figure 1).



**Figure 1:** Structure of Polymethylhydrosiloxane (PMHS).

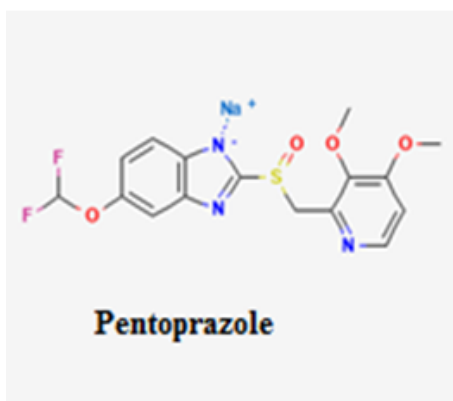
### Methyl Poly Siloxane

In case of infants and people over the age group of sixty-five finds several complications after taking an antacid. The side effects include constipation or diarrhoea, flatulence, headache, nausea, vomiting, stomach cramps/ pains and pain in the lower abdomen respectively. In addition, there could be more serious side effects which include a) Acid rebound: In this case, antacids may cause our body to produce more acid which worsens the symptoms b) Neurotoxicity: In this case, an antacid interrupts the function of our nervous system by lowering sodium (Na<sup>+</sup>) and potassium (K<sup>+</sup>) ions and creating problems in sending nerve impulses to our brain to act normally c) Microcytic anaemia: In this case, iron deficiency occurs which creates many kinds of problems in our body d) Osteopenia: In this case, our bones become weak e) Hypercalcemia: In this case, we used to have too much calcium intake in our blood as well as may create development of gall bladder stones [3].

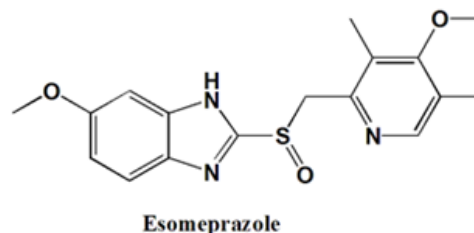
So, we shouldn't take antacids frequently. If we experience symptoms of heartburn or indigestion in a regular basis, we need to reach out to our doctor or healthcare provider to

look into the cause of our symptoms. There are several types of other medicines which can treat heartburn or indigestion but they are not exactly classified into the group of antacids because the ingredients work in different ways than those of usual antacids. Common medicines that are not in this group are a) Esomeprazole: It treats acid reflux and ulcers b) Famotidine: It acts on stomach ulcers, esophagitis and GERD c) Omeprazole: It helps in treating stomach and esophagus problems d) Pantoprazole: It helps in healing stomach ulcers, esophagus problems and GERD [4].

Pantoprazole (1H-benzimidazole substituted by a difluoromethoxy group at 5-position and a [(3,4-dimethoxypyridin-2-yl) methyl] sulfinyl group at 2-position respectively and esomeprazole ((S)-5-Methoxy-2-[(4-methoxy-3,5-dimethylpyridin-2-yl) methylsulfinyl]-3H-benzimidazole) is a class of benzimidazole group of drugs. These drugs are mainly prescribed as an "anti-ulcer" drug (Figures 2 and 3).



**Figure 2:** Structure of Pantoprazole.



**Figure 3:** Structure of Esomeprazole.

Recent research study suggests that B vitamins viz, B1 (thiamine); B2 (riboflavin); B3 (niacin); B5 (pantothenic acid); B6 (biotin); B12 and folic acid may be beneficial in the treatment of acid reflux. In fact, one study in UCL, UK found that more intake of B vitamins is associated with a lower risk

of GERD, reflux esophagitis, which is caused by inflammation in the esophagus [5] (Figures 4 and 5).



**Figure 4:** B-vitamin sources.



**Figure 5:** Various company bands antacids tablets.

Research study also suggests greater intakes of folates and vitamin B6 are associated with lower risk of esophagus cancer and a condition called “Barrett’s esophagus” which are the potential complications of long-term GERD diseases. Research study has also found that supplementing with “probiotics” (curd) may help decrease symptoms of acid reflux.

### **Now Comes the Most Important Point of Interest Why do we Experience Acidity & Flatulence Problems?**

Research studies based on various medicinal journals reports the actual cause of acidity and flatulence. We all know our stomach secretes hydrochloric acid and pancreas secretes pepsin in regular intervals. The hydrochloric acid and pepsin play fundamental role in digestion and their secretion depends upon individual’s food habits and time of intervals between the foods to be taken. If an individual maintains it

properly followed by adequate sleep there is no reason for feeling acidity or flatulence [6].

Usually, we should have different foods according to our choices in our daily routine in addition to main courses of breakfast, lunch and dinner. Also, there should not be a time gap of more than 3-3.5 hour’s interval between the foods taken earlier and present. This process regulates proper hydrochloric acid and pepsin secretion in our digestive system we feel comfortable. Once, this routine fails for a period of time, we feel hungry due to excess secretion of hydrochloric acid and pepsin and if it continues for a longer period, hydrochloric acids start effecting stomach walls and similarly pancreas by pepsin. Slowly this leads to “Acute acidity, flatulence, vomiting” syndromes and finally develops stomach and pancreatic “Ulcers” which in the long run may lead to the development of “Cancer” if not diagnosed timely using “Endoscopy” & “CT-Scan” techniques along with few blood tests. So, as a responsible person one should not avoid taking timely foods in maintain proper intervals. Proper maintaining of consuming foods never creates “Acidity & Flatulence” problems and any individual can lead a healthy life without use of “Antacids”!

### **What are Common Food Items to be Consumed as Intermediate Foods?**

Puffed rice (Murai) is the best “intermediate food” between main courses because of its many wonderful benefits (Figure 6). It helps to eliminate abdominal gas and in turn helps in treating a wide range of gastrointestinal disorders like abdominal distension, bloating, heartburn, diarrhea, flatulence, peptic ulcer and gaseous cramps [7].



**Figure 6:** Puffed Rice.

### **Puffed Rice (Murai/Muri)**

Various B-vitamin fruits are also best sources which we may use as “interval foods” depending upon our choices. Ginger

containing snacks are rich in antioxidants and phenolic compounds. These may as good “interval foods” as well. Zinger itself if consumed in small amounts daily may provide health benefits, such as reducing inflammation associated with acid reflux. Also, ginger’s anti-inflammatory properties may help reduce the production of stomach acid. This may help relieve symptoms of acid reflux. Therefore, message is very clear, if an individual is following good regular routine of taking foods with adequate sleep, there is no question of development of acidity or flatulence problems. Also, one should be very careful about drinking water [6,7]. One individual (male/female) should drink 3 to 4 litres of pure water/day while children (below 12 years) should drink 3 litres/day. So even if you are very busy in your daily life and often skip your lunch you are advised to take small food items with proper time intervals to keep yourself healthy. Medical professionals with good clinical eyes always prefer and advice for “intermediate” food items depending upon individual’s choices rather than prescribing common antacids in order avoid the side effects.

### Case Study

Based upon our concept of introducing “intermediate foods” in small intervals we have done few case studies with the patients suffering with chronic acidity, flatulence and vomiting symptoms in our locality (with different food habits and temperature zones).

#### Case Study 1 (Area- Siliguri, Darjeeling, India; Patient Age: 45 Years, Male)

**Patient History:** Chronic acidity, stomach pain, flatulence & heart burn for a period of 6 months. Patient was administered with “Aluminium hydroxide + Magnesium hydroxide and simethicone combination for one month followed by “Pantoprazole-D” (40 mg + dompiridone 10mg) for two months under medical treatment of a doctor and was doing well.

**Intervention:** We studied patient’s food habits and started introducing intermediate foods in small intervals (3 hrs) initially without withdrawing his prescribed drugs for 7 days and withdrawn the drugs after 8th day. Also we requested him to stop intake of fried items and spicy foods.

**Outcome:** After completion of two months (21st Nov 2024 to 20th January 2025) the patient has been found to be in normal appetite and with no complains of acidity, heartburn and flatulence. USG study of whole abdomen of the patient has been conducted and found normal.

#### Case Study 2 (Area- Kalimpong, Darjeeling, India; Patient Age: 80 Years, Male)

**Patient History:** Chronic acidity, stomach pain, flatulence & heart burn, loss of appetite for 7 months

Patient was administered with “Aluminium hydroxide + Magnesium hydroxide and simethicone combination for one month followed by “Esomeprazole-D (40 mg + dompiridone 10mg) and sucralfate solution for two months (had initial stomach wall markings found in USG & upper GI-endoscopy, suspected primary ulcers) under medical treatment of a doctor and was doing well.

**Intervention:** We studied patient’s food habits (patient was habituated in regular intake of momo, chaumins in the breakfast and fried items, rich foods at lunch followed by a long gap before taking dinner at 8PM. We had started introducing intermediate foods in small intervals (3 hourly) initially without withdrawing his prescribed drugs for 7 days and withdrawn the drugs after 8thday. Also, we had strictly followed him avoiding fried items in breakfast. After completion of two months (21stNov 2024 to 20thJanuary 2025) the patient has been found to be in normal appetite and with no complains of acidity, heartburn and flatulence. USG study of his whole abdomen, upper GI-endoscopy and liver function test (LFT) has been conducted and found the results almost in normal limits.

#### Case Study 3 (Area- Hashimara, Alipurduar, India; Patient Age: 64 Years, Male)

**Patient History:** Chronic acidity, stomach pain, flatulence & heart burn for 8 to 9 months.

Patient was administered with “Rabiprazole-D” for 3 month (40 mg + dompiridone 10mg) under medical treatment of a doctor and was doing well.

**Intervention:** We studied patient’s food habits (usually patient used to take flour containg breakfast items and tea in regular intervals and typical Bengali dishes containing red meat and fatty fishes at lunch followed by tea in the evening and dinner with almost with the same items at 10-11PM.

**Outcome:** We had started introducing intermediate foods in small intervals (3 hourly) initially without withdrawing his prescribed drugs for 7 days and withdrawn the drugs after 8<sup>th</sup> day. Also, we had strictly monitored the patient avoiding intake of fried items, red meats and spicy foods. In addition, we recommend to prepone the dinner time at 8PM. After completion of two months (21st Nov 2024 to 20th January 2025) the patient has been found to be in normal appetite and with no complains of acidity, heartburn and flatulence. USG study of whole abdomen of the patient and liver function test (LFT) has been conducted and found almost within normal limits.

### Conclusion

Finally, we have found a very interesting and successful applications of “Intermediate food” items which are very soft and gentle to pancreas, stomach, liver and capable of reducing the neutralization of acid secretions from stomach.



Also, our study clearly indicates that intermediate foods can actively stop the unnecessary usage of antacids if patients are careful in their food habits with the regular intake of intermediate foods in addition to breakfast, lunch and dinner respectively. So, we may recommend 'Intermediate foods' as supplement to avoid the intake of "Antacids" which have many side effects if consumed regularly. So, the message from our study is proper maintaining of consuming foods never creates 'Acidity & Flatulence' problems.

## References

1. Sontag SJ (1990) The medical management of refluxesophagitis, Role of antacids and acid inhibition. *Gastroenterol Clin North Am* 19(3): 683-712.
2. EI-Setag HB; Sweet S, Winchester CC, Dent J (2014) Update on the epidemiology of gastro-oesophageal reflux disease: a systematic review. *Gut*.
3. Sedman A (1992) Aluminium toxicity in childhood. *Pediatr Nephrol* 6: 383-393.
4. Eigen G (2001) The epidemiology of gastroesophageal reflux disease: what we know and what we need to know. *Americal J Gastroenterol* 96(8): 516-528.
5. Chakraborty B (2025) Antacids & its adverse effects Sikkim Express.
6. Kennedy D (2016) Vitamin B complexes in the treatment of acidity and flatulences. *Nutrients* 8: 68-79.
7. Rivlin RS (2007) Riboflavin (vitamin B2) In the treatment of Pancreas ulcers. In: Suttie JW (Eds.), 4<sup>th</sup> (Edn.), *Handbook of Vitamins*, CRC Press; Boca Raton, FL, USA.