



Review Article

A COMPREHENSIVE LITERARY REVIEW OF GASTROESOPHAGEAL REFLUX DISEASE (GERD) IN AYURVEDIC PERSPECTIVE

Neha Yadav^{1*}, Amarendra Kumar Singh²

*1MD Scholar, ²Associate Professor, Dept. of Rog Nidan evumVikriti Vigyan, G.A.C.H, Patna, Bihar, India.

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ABSTRACT

The reasons for the rise in metabolic disorders in society include busy schedules with abnormally pressured lifestyles, altered food habits and their patterns, insufficient sleep, and a lack of observance of *Dincharya*, *Ritucharya*, *Ratricharya* and *Sadvritta*. Achieving the unlimited desires in a very short period of time produces different types of anxiety, worry, anger, fear and depression which directly or indirectly leads to various types of G.I. tract disorders and Gastroesophageal reflux disease (GERD) is one of them. Gastroesophageal reflux disease (GERD), which affects most nations and their populations, has become a widespread ailment over time. Reflux, or the backflow of stomach contents into the esophagus, throat, lungs, and airways, is a common complaint among GERD sufferers. Nowadays people do not follow the rules like '*Dincharya*' and '*Ritucharya*'. All these things disturb the balance of '*Tridosha*'. In addition to these, addition to various vices such as smoking and alcohol results in the disturbance of normal physiology of the body, which again affects G.I. tract and thus produces G.I. disorders. The *Pitta Dosh* is disturbed by all of the aforementioned elements. The *Vyadhis* like *Amlapitta*, *Ajirna*, *Annadravashoola* and *Parinamashoola* can be correlated with GERD. In *Amlapitta* there is mainly vitiation of *Pitta Dosh*. Normally *Pitta* has *Katu Rasa* but when *Katu Rasa* becomes *Vidagdha* and attains *Shuktibhava*, it creates *Amlata* in *Amashaya*, it is called vitiation of *Pitta Dosh*. *Amlapitta* is one of the disorders caused by vitiated *Pitta*. These three *Vyadhis* come under *Annavaha Srotas* and *Agnimandya* is their underlined cause which should be treated. To gain an insight this review will aim to understand the Ayurvedic perspective of gastroesophageal reflux disease.

INTRODUCTION

Ayurveda is holistic science which deals not only with the curative aspect but also preventive one. It puts a strong emphasis on keeping people healthy and eradicating disease. Modern era of fast, busy and stressful life has created several disharmonies in human biological system; one among them is the digestive system (*Annavaha Srotas*). The word *Annavaha Srotas* means the channel through which food is transported.

Amlapitta is an *Annavaha Srotas Vyadhi* and its incidence is increasing due to non-observance of *Dincharya*, *Ritucharya*, *Ratricharya* and *Sadvritta* regimens, *Virudhha Anna* (unwholesome diet), *Apathya Sevana* and disturbed *Treya-upastambha* i.e., *Ahara*, *Nidra* and *Brahmacharya*. *Charaka*, *Sushruta* and *Vagbhatta* have not mentioned *Amlapitta* as disease. The first work to describe *Amlapitta* as a distinct clinical condition, nevertheless, is the *Kashyap Samhita*. Further, *Madhavakara* described its *Nidana* (aeto- pathogenesis), *Lakshana* (symptoms) and *bheda* (two subtypes). *Chakrapani* in his commentary on *Charaka Samhita* states that "*Amlagunodriktam Pitta Amla Pitta*". However, its *Amla* and *Drava Guna* is more vitiated.^[1] Any disharmony at any level of *Annavasrotas* or *Dehagni* results in *Ama*; an intermediate product generated due to the deranged metabolism of digestive fire triggering digestive

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process in the body results into *Ama-visha* formation and *Ajirna* and its further stage is *Parinamashoola* and *Annadravashoola*. The symptoms of GERD, which include coughing, heartburn, and regurgitation, are known to have a significant impact on a person's quality of life today. The incidence of GERD is high in the general population, it is estimated to affect up to 20% of the population worldwide.^[2]

AIMS AND OBJECTIVES

- To study the disease GERD vis a vis *Amlapitta*.
- To study such type of other disease like *Ajirna* (*Vidagdhajirna*), *Annadravashoola* and *Parinamashoola*.

MATERIALS AND METHODS

The basic and conceptual materials were collected from the Ayurvedic classics i.e., *Bruhtrayi* and *Laghutrayi* with their available commentaries, modern books, research paper and journal.

Gastroesophageal Reflux Disease in Ayurvedic Perspective

Gastroesophageal reflux disease in Ayurvedic perspective include *Amlapitta*, *Ajirna*, *Parinamashoola* and *Annadravashoola*.

Amlapitta

विदग्धं शुक्ततां याति शक्तमामाशये स्थितम् ।

तदम्लपित्तमित्याहुर्भूयिष्ठं पित्तदूषणात् ॥

-का. खि. १६/९

According to *Acharya Kashyapa*, the *Vidagdha ahara* becomes *Amla* and remains still in the stomach which provokes the *Pitta dosha*. Provoked *Pitta* causes reduction in the digestive power and also causes fermentation of the food. This fermented food in turn causes vitiation of *Pitta* in *Amashaya*, ultimately causing "*Amlapitta*".^[3]

Nidana

In *Madhava Nidana*, *Nidana* described are^[4] –

विरुद्धदुष्टाम्लविदाहिपित्तप्रकोपिपानान्नभुजो विदग्धम् ।

पित्तं स्वहेतूपचितं पुरा यत्तदम्लपित्तं प्रवदन्ति सन्तः ॥

- मा. नि. ५१/१

When a person with a pre-existing tendency for excessive *Pitta* secretion (habitually) takes incompatible, unhygienic, (excessively) sour and *Pitta*-

vitiated food and drinks, there is malsecretion of *Pitta*; the medical sages call this condition as *Amlapitta*.

Bheda

Amlapitta is classified according to the *Dosha Dushti* and *Sthana Dushti* of the *Srotasa*.

According to *Dosha Dushti*

(i) *Kashyapa Samhita*

- *Vataja Amlapitta*
- *Pittaja Amlapitta*
- *Kaphaja Amlapitta*^[5]

(ii) *Madhav Nidana*

- *Vatadhikya Amlapitta*
- *Kaphadhikya Amlapitta*
- *Vata-Kaphadhikya Amlapitta*^[6]

According to *Sthana dushti*

- | | | |
|---------------------------|---|--|
| (i) <i>Madhava Nidana</i> | } | <i>Urdhvaga Amlapitta</i> |
| (ii) <i>Bhavaprakasha</i> | | <i>Adhoga Amlapitta</i> ^[7,8] |

Rupa

अविपाकक्लमोत्व्लेशतिक्ताम्लोद्गारगौरवैः ।

हृत्कण्ठदाहारुचिभिश्चाम्लपित्तं वदेद्भिषक् ॥

-मा. नि. ५१/२

Rupas are the most vital factors in the process of diagnosis. *Acharya Madhava* described the condition as *Amlapitta* when there is dyspepsia, fatigue, nausea, acid and sour eructations, a feeling of heaviness, a burning sensation in the regions of the heart and the throat, and anorexia.^[9]

Samprapti

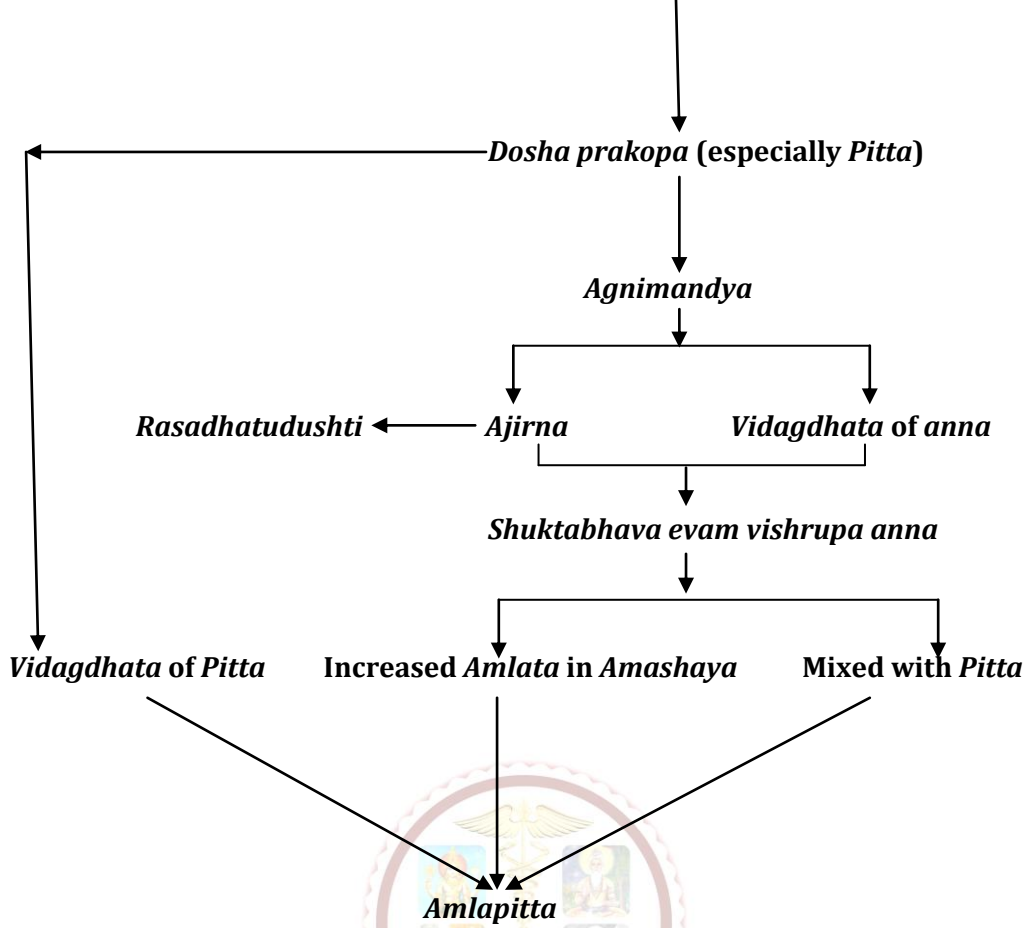
Samprapti is the process of understanding of development of disease by the vitiated *Doshas* which are constantly circulating inside the body. Disease manifest due to specific actions of the *Doshas* and understanding of such events is called *Samprapti*. *Acharya Kashyapa* has described *Samprapti* in detail.

According to *Acharya Kashyapa*, the *Nidana Sevana* causes *Dosha Prakopa* especially *Pitta Dosha*. This eventually creates *Mandagni* due to which ingested food becomes *Vidagdha* and attains *Shuktibhava*. In *Amashaya*, this food's *Vidagdha* and *Shuktibhava* produce *Amlata*. This condition is called *Amlapitta*.^[10]

Diagram of Samprapti

Sanchaya of Pitta (Svahetu)

Nidana Sevana



Ajirna

The literary meaning of the term - 'Ajirna' is indigestion or no digestion name indicate that food is being digested with difficulty. It is an important digestive disorder caused by the malfunctioning of Agni.

Nidana

अत्यम्बुपानाद्विषमाशनाद्वा सन्धारणात् स्वप्नविपर्ययाच्च ।
 कालेऽपि सात्स्यं लघु चापि भुक्तमन्नं न पाकं भजते नरस्य ॥
 ईर्ष्याभयक्रोधपरिक्षतेन लुब्धेन शुग्दैत्यनिपीडितेन ।
 प्रद्वेषयुक्तेन च सेव्यमानमन्नं न सम्यक् परिणाममेति ॥

सु. सू. ४६ / ५०७ - ५०८

The Nidana factors are broadly of four types of Ajirna:^[11,12]

a. Food Related (Aharajnidana)	b. Lifestyle (Viharaja Nidana)	c. Psychological	d. Agantuja Nidana
1. Atyambupana 2. Atimatra Bhojana 3. Atilanghana 4. Vishamasana 5. Asatmyaahara 6. Kaphakara Ahar 7. Food related Atiruksha, Atisnigdha, Gurubhojan, Vidahibhojan, Amabhojana, Vishtambhi Pishtabhojan etc.	1. Vegadharana 2. Swapanaviparayaya 3. Ratrijagran/ Divashayan 4. Aversion to Dincharya, Ratricharya, Ritucharya, Sadvritacharya	Dwesh, Bhaya, Chinta, Krodha, Moha, Raga, Lobha and eating food when there is aversion for it.	1. Virechana 2. Snehavasti Vyapad 3. Sneha Vibhrama 4. Desha Kala Vaishamya 5. Vyadhi Karshana

Types of Ajirna

According to predominance of vitiated *Doshas*, *Ajirna* is broadly classified into three categories:

- *Amajirna*: Due to vitiation of *Kapha dosha*.
- *Vidagdhajirna*: Due to vitiation of *Pitta dosha*.
- *Vishtabdhajirna*: Due to vitiation of *Vata dosha*.
- *Rasasheshajirna*- Related to *Ahara Rasa* indigestion on nutrient of food.
- *Dinapaki-Ajirna* - In which the food is digested on next day but causes no difficulty.^[13]

Samprapti

Due to excessive usage of above factors the power of *Agni* or digestive fire becomes very weak, hence it cannot digest the food properly even in very small amount. In this disorder *Pachakapitta*, *Samanvata* and *Kledaka Kapha* are vitiated mostly.

Nidana Sevana (Consumption of Etiological factors)

↓
Aggravation of *Vatadi Doshas*

↓
Diminution of *Jatharagni*

↓
Development of *Ama* inside the gastro intestinal tract

↓
Localisation of *Vatadi Doshas* and *Rasadi Dhatus* in the *Annavaha Srotas*

↓
Undigested food becomes sour in taste and toxic

↓
Ajirna

Samprapti

Parinamashoola and Annadravashoola

Parinamashoola

भुक्ते जीर्यति यच्छूलं तदेव परिणामजम् |

- मा. नि. २६/ १५ - १६

Parinama Shoola is a disease having close resemblance with *Amlapitta*. But as its name indicates, the 'Shoola' (pain) is the primary symptom in this disease which is present in all type of *Parinama Shoola*. *Parinama Shoola* is an independent clinical entity. *Madhavacharya* has described this in the chapter of *Shoola Nidana* with all its aspect.

Therefore, *Parinama Shoola* literally means, a disease in which, there is pain during digestion, as *Madhava* has mentioned - '*Bhukte Jeeryatiyat Shoolam Tadeva Parinamajam*'. When *Vayu*, deranged on account of its specific aetiological factors, gets localised, and getting enveloped by *Kapha* and *Pitta* becomes more powerful, it produces colicky pain. This colic occurs during the period of digestion and is called *Parinamaja Shoola*, in brief, this characteristic is its salient feature.^[14]

Bheda of Parinama Shoola

According to *Madhava*, there are seven types of *Parinama Shoola* i.e., *Vataja*, *Pittaja*, *Kaphaja*, *Vata-Pittaja*, *Vata-Kaphaja*, *Pitta-Kaphaja*, *Sannipata*.

It is a general principle of Ayurveda that till the *Doshas* are in harmony and equilibrium, no disease is produced. But when the equilibrium is disturbed, diseases are produced. *Amashaya* is the site of *Kledaka Kapha*, *Pachaka Pitta*, and *Samana Vayu*. *Kledaka Kapha* protects *Amashaya* from ill effects of *Pachaka Pitta*. *Samana Vayu* stimulates the *Pachaka Pitta* only to the extent that it may not become dominant over the activities of *Kledaka Kapha*. Normally the *Kapha* acts as antagonist to *Pitta*. The eroding effect of *Pitta* on mucus membrane of *Amashaya* is counteracted by *Kapha*. The movement and motility of *Amashaya* are controlled by *Vayu* in such a way that this balance between *Kapha* and *Pitta* is maintained.

Due to defective dietetic and behavioural habits, *Vayu* is vitiated which causes '*Avarana*' of *Kapha* and *Pitta*. Thus the *Kapha* and *Pitta* both becomes obstructed (*Avrita*) by *Vayu*.^[15] In this way *Vayu* produces dysfunction of *Kapha* and *Pitta*. *Pitta* becomes more vitiated.

Annadravashoola

जीर्णे जीर्यत्यजीर्णे वा यच्छूलमुपजायते ||

पथ्यापथ्यप्रयोगेण भोजनभोजनन च |

न शमं याति नियमात् सोऽन्नद्रव उदाहृतः ||

- मा. नि. २६/ २१ - २२

In this disease, *Shoola* is always present i.e. after, during or before digestion of food. It remains continuously whether the person is hungry or empty or full stomach. Patient only get relief after after vomiting.^[16]

Gastroesophageal Reflux Disease (GERD)

Gastro-oesophageal reflux (GER) is defined as retrograde flow of gastric contents into the oesophagus. A small amount of GER occurs in normal individuals.^[17] It is one of the most prevalent gastrointestinal disorders. Population- based studies show that upto 15% of individuals have heart burn and/ or regurgitation at least once a week, and 7% have symptoms daily. Symptoms are caused by back

flow of gastric acid and other gastric contents into the esophagus due to incompetent barriers at the gastro-oesophageal junction.^[18]

Pathophysiology: Gastro-oesophageal reflux disease episodes happen occasionally in healthy people. Reflux is normally followed by oesophageal peristaltic waves which efficiently clear the gullet, alkaline saliva neutralizes residual acid, and symptoms do not occur. When the oesophageal mucosa is exposed to gastroduodenal contents for extended periods of time, gastro-oesophageal reflux disease occurs. This causes discomfort and, in some cases, oesophagitis. Several factors are known to be involved in the development of gastro- oesophageal reflux disease.^[19]

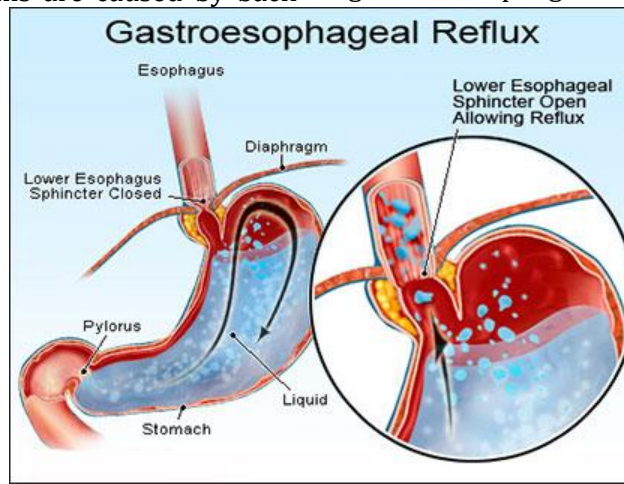
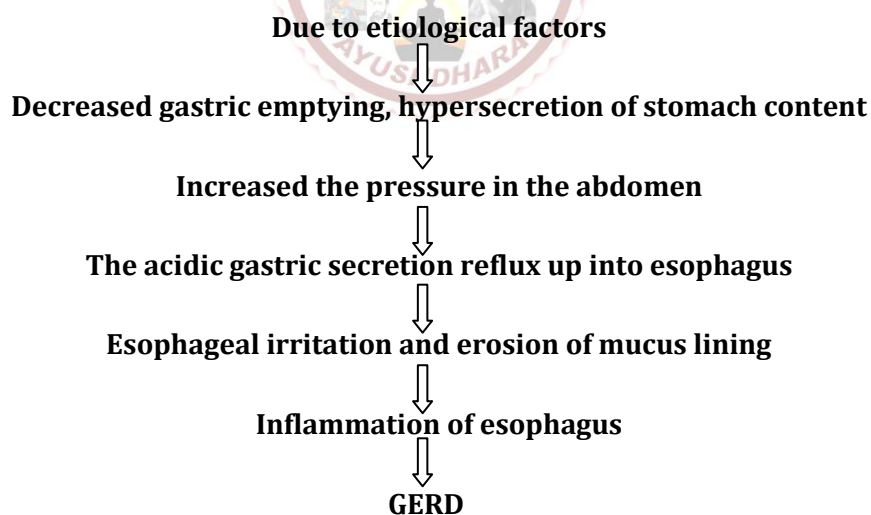


Figure 1: Gastroesophageal reflux Disease adapted from Kauveri Hospital Trichy, Tirunelveli



Etiology: Abnormalities of lower esophageal sphincter, Hiatus hernia, delayed esophageal clearance, Defective gastric emptying, increased intra- abdominal pressure, dietary and environmental factors are responsible for Gastroesophageal reflux disease.^[20]

Clinical Features: The major symptoms are heartburn and regurgitation, often provoked by bending, straining or lying down. It is common to experience "waterbrash," which is salivation brought on by reflex

salivary gland stimulation as acid enters the gullet. Some individuals have nighttime choking due to fluid reflux irritating their larynx. Others develop odynophagia or dysphagia. A variety of other features have been described, such as atypical chest pain which may be severe and can mimic angina, and may be due to reflux- induced oesophageal spasm. A few more are asthma, recurring chest infections, chronic coughing, and hoarseness (sometimes known as "acid laryngitis").^[21]

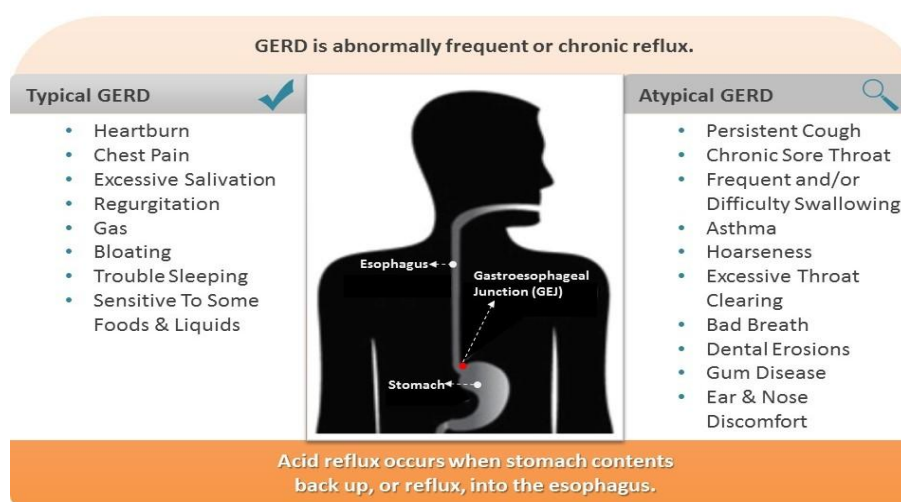


Figure 2: A clinical evaluation of typical and Atypical GERD symptoms adapted from Endo Gastric Solutions 2020 (7). GERD, Gastroesophageal reflux disease

Complications: The complications of GERD include Oesophagitis, Barrett’s oesophagus, anaemia, Benign Oesophageal stricture, gastric volvulus.^[22]

Investigations: Young patients who present with typical symptoms of gastroesophageal reflux, without worrying features such as dysphagia, weightloss or anaemia, can be treated empirically without investigation. Investigation is advisable if patients present over the age of 50-55 years, if symptoms are atypical or if a complication is suspected. Endoscopy is the investigation of choice. This is performed to exclude other upper gastrointestinal diseases that can mimic gastroesophageal reflux and to identify complications. Twenty- four- hour pH monitoring is indicated if the diagnosis is unclear or surgical intervention is under consideration. This involves tethering a slim catheter with a terminal radiotelemetry pH- sensitive probe above the gastroesophageal junction.^[23]

DISCUSSION

“*Rogasarveapimandagni*” i.e., *Mandagni* is the root cause of the gastrointestinal tract. Nowadays causes of these diseases i.e. *Amlapitta*, *Ajirna*, *Parinamashoola* and *Annadravashoola* are mostly related to lifestyle changes such as increasing sedentary lifestyle due to growing use of technologies in daily life causes higher level of physical inactivity and unwholesome diet, disturbed sleep pattern and wrong Dietary habits. It changes the mechanism of internal vital organ and related systems of the body at first they directly hamper the digestive juice and enzymes (*Pachaka pitta*) therefore food converted into undigested material which leads to onset of *Ajirna*. *Amlapitta* is also one of the major diseases caused by lifestyle changes as its prevalence is increasing day by day. It's interesting to note that some regions of the world are more impacted than others by GERD, which

eventually leads to high healthcare expenses globally. Ayurveda has explained the involvement of *Annavahasrotas dushti* in onset of each and every disease which can play key role in prevention of primary disease.. People who have intake food according to described rules in *Ayurveda* and follow a proper *Dincharya*, *Ratricharya* and *Ritucharya* and *Sadvritta* and *Pathya Palana* then he would never be suffered from *Ajirna* (indigestion) along with any type of digestive and other system related abnormalities.

CONCLUSION

In today’s lifestyle, it is necessary for everyone to understand the importance of health. One of the most prevalent illnesses in society is *Amlapitta*. It is seen in all ages, all classes, and all community which decreases the quality of life significantly. Acid that is regularly secreted by the stomach plays a crucial role in digestion. The condition known as hyperacidity is brought on by an overproduction of stomach acid. *Amlapitta* and *Ajirna* has become the burning issue in the present era. It can be cured with the simple medicament but long term medicine use may possess side effects. Additionally, as more is learned about gastroesophageal disease and those who are most at risk, people will be better informed about lifestyle choices and how to manage their GERD symptoms, leading to an improvement in their quality of life and a reduction in GERD and GERD-related illnesses. For prevention and total cure of the disease not only the physiological function of the body should be in balanced state but also the mental function should be well functioning. Proper lifestyle in Ayurveda comprises of Rules and regulation of *Ahara* and *Vihara* includes *Uchit Dincharya*, *Ratricharya*, *Ritucharya*. So everyone should follow the rules and regulation for Diet and Lifestyle prescribed in Ayurveda for prevention of such life style disorders.

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*Address for correspondence

Dr. Neha Yadav

MD Scholar

Dept. of Rog Nidan evum

Vikriti Vigyan, G.A.C.H, Patna,
Bihar, India.

Email: nehastar20@gmail.com

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