



Review Article

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AMLAPITTA - A DISRUPTION IN THE PHYSIOLOGY OF DIGESTION: A REVIEW

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ABSTRACT

Amlapitta may be defined as a condition of annavaśrotas (gastro intestinal tract) in which the digestion is impaired resulting in amlata or śuktata of āmāśaya (acidity of gastric contents), mainly due to the error in Pācaka pitta. The concept of Pācaka pitta and vidāha is essential for understanding Amlapitta. The pathogenesis of Amlapitta is discussed in this article based on the physiology of digestion, the role of amla rasa in digestion, and the concept of vidāha. According to Kāśyapa Saṁhita, Amlapitta is a broad concept, which encompasses various disruptions in digestive physiology. An attempt is made to analyze Amlapitta in terms of modern patho-physiology. The possibility of consensus in the concepts of pathophysiology in Ayurveda and that in modern science is explored and initiated.

KEY WORDS: Amlapitta, Pācaka pitta, vidāha, āmāśaya, gastro esophageal reflux disease

INTRODUCTION

Pitta is one among the tridoṣas - the triad of basic humor, in the human body. The entire range of biochemical transformations in human body comes under the broad concept of pitta. To be very general, Amlapitta is a disorder of pitta.

There are five versions of pitta based on their activities and localization in different areas of the body. Among them, the most important one is that which is located in the digestive system -annavaśrotas, which itself is the mahāśrotas. Because of its influential role in the digestion, it is named as, pācaka pitta (Agni)¹. To be specific amlapitta is a disorder of annavaśrotas, mainly due to an error in pācaka pitta.²

CONCEPTUAL ASPECTS

Concept of Vidāha

Amla is one among the six rasās. For the sake of practical understanding, rasās can be considered as a criterion for the classification of dravya (materials) based on the gustatory stimulation produced by it. A set of characteristic features are ascribed for dravyas with specific rasa predominance. These rasās have a definite role in the normal physiology of various systems in human body.

The mūrta bhāva (material form) of pitta is included under the category of dravyas with katu rasa³. In some pathological conditions, the pitta may undergo abnormal biotransformation, resulting in amla rasa of pitta⁴. Then it is called vidagdha pitta. The term vidagdha is used to denote something that has undergone such abnormal biotransformation. Anything that causes abnormal biotransformation in the body is termed as “vidāhi”.

In the context of amlapitta Cikitsa, Kāśyapa Saṁhita clearly says that āmāśaya is the adhiṣṭāna of roga (site of pathogenesis)⁵. Therefore, we can be more specific that,

amlapitta is a condition of GIT, which is characterized by the vidagdhvāstha of contents of the stomach (āmāśaya).

Amlapitta may be defined as a condition of annavaśrotas (GIT) in which the digestion is impaired resulting in amlata or śuktata of āmāśaya (gastric contents), mainly due to the error in pācaka pitta⁶. Hence, the disease got its title -amlapitta, from its origin.

Physiology of Digestion In Ayurveda

According to Kāśyapa Saṁhita⁷, the key factors involved in the digestion are,

1. Avyāpanna adhiṣṭāna (normalcy of the system)
2. Pācaka pitta. (Version of pitta doṣha.)
3. Support of Prāṇa, Udāna and Samāna vāta.(versions of vata doṣha.)

Avyāpanna adhiṣṭāna implies the competency of āmāśaya (stomach). According to Cakrapāni⁸ ūrdhva āmāśaya is kapha sthāna and adho āmāśaya is pitta sthāna. Kapha (doṣha), which is located in the ūrdhva āmāśaya, is termed as Klēdaka Kapha⁹, because of its role in generating klēda (softening and lubricating) during digestion. Therefore, the term Avyāpanna adhiṣṭāna may have the implications of structural competency of the stomach including the normalcy of klēdaka kapha.

Pācaka pitta is the chief digestive Agent. It is Agni bhūta predominant even if it is pancabhūtātmaka (made of all the five bhootas).

The vāta may be considered as a propagating energy sequence empowering and controlling the bodily activities -‘vāyustantra yantra dhara’¹⁰. Prāṇa, Udāna, and Samāna are the different versions of Vāta said to be involved in the regulation of digestion. Udgāra and anna pravēśana are the functions of Prāṇa. Stimulation of digestive activity and intestinal motility are functions of Samāna. Vyāna supports absorption and assimilation¹¹.

All the dōṣas must be in a balanced state and should be complementary to each other for the normal functioning of the system.

Physiology of Amla rasa¹²

Amla rasa is one among the āgnēya rasas (derivative of agni bhoota). Amla has a definite role in the digestion by augmenting pitta. In addition, Amla is essential for anulomata of vāta-the proper channelization or sequencing of biological activities. However, in excess, it can be a potential cause for dōṣa and dhātu vikṛti (physiological and structural aberration). Excess of Amla in āmāśaya can cause excessive vilayana (liquefaction) of klēdaka kapha, thīkṣaṇata (potentiation) of pitta, rakta duṣṭi (vitiation of blood), mamsa vidāha and even kāya śithilīkaraṇa (disintegration of body). It can bring about structural and functional aberrations in the digestive tract.

PATHOLOGICAL ASPECTS

Pathology of Amlapitta

A functional equilibrium of Vāta, Pitta and Kapha is essential for the maintenance of normal physiology of the body. Abnormal eating habits, nature of food and lifestyle can bring about disturbances of dōṣas. Disturbances of any of the dōṣas can impair digestion.

In the case of amlapitta, the disturbances causing a decrease in the digestive ability (Agni) is mainly due to the impairment of pitta -“bhūyīṣṭam pitta dūṣanat”. But the term ‘bhūyīṣṭam’

allows a space for the other dōṣas also in causing a decrease in digestive ability. This is the logic behind the vikalpa samprāpṭhi (alternate pathway of disease development based on dōṣa predominance) of amlapitta. Kaśyapa Samhita differentiates the predominance of the dōṣas (Dōṣa vikalpa) involved in the samprāpṭi (pathogenesis) with the help of symptoms.

The food under digestion is partially transformed with sour taste (vidagdha) due to diminution of agni which is mainly because of vitiated pitta. The presence of improperly transformed food (vidagdha ahara) in stomach may affect the normal propagation of vata in GIT. It seems that variation in pitta can trigger vata. Vata is designated as ‘pitta sakha’. There is always a chance of partnership relation between vata and pitta. Vata is responsible for all movements in the body. In this context also, it could be assumed that the presence of vidagdha pitta is infact triggering the vata. As pitta dosha don’t have independent mobility in body, it must depend on vata for mobilising the denaturated pitta from the koshta. The disturbance to the normally propagating vata may get expressed as atipravartti (over activity) or pratiloma pravartti (retrograde activity). Whenever there is pratiloma pravartti, it is called udgara (belching). When the contents in stomach are vidagdha, the udgara becomes amla. Whenever there is atipravartti of vata, it results in increased intestinal motility and manifests as loose stool (vit bheda). According to Kashyapa Samhita, both these conditions can co-exist. Some authors considered these as two classification of amlapitta. The predominance of pratiloma pravartti is called urdhwaga amlapitta and the predominance of atipravartti is called adhoga amlapitta.

Illustration of Pathogenesis of Amlapitta

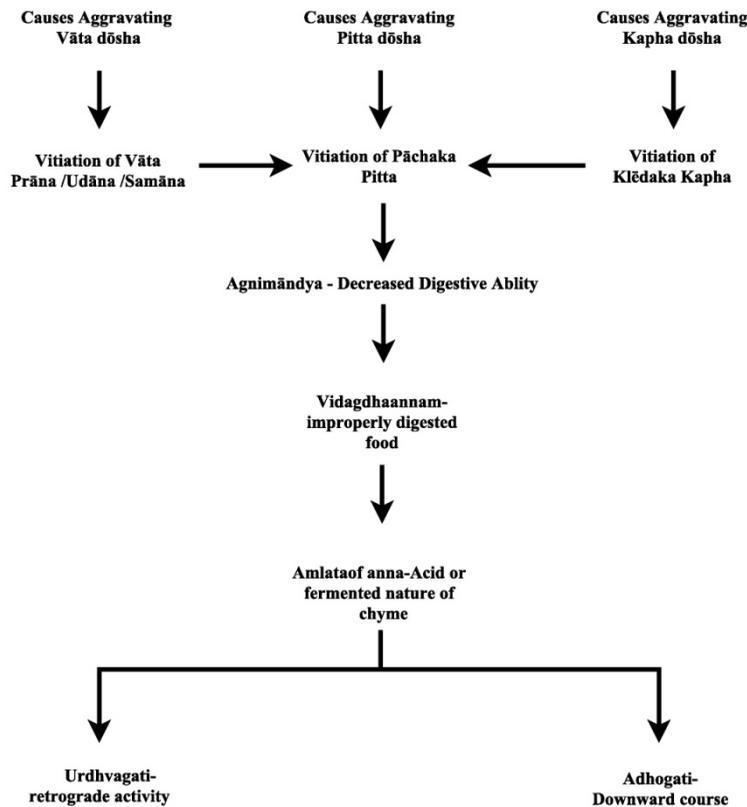


Illustration of Pathogenesis of Amlapitta Figure 1.

Considering the overall picture of the physiology of digestion and pathogenesis of amlapitta, it may be correlated with the acid-related disorders of the stomach. With a parallel review of modern digestive physiology, some contents in the gastric secretions may be considered responsible for the amlata, possibly acid secretions from the stomach. These gastric secretions are inevitable for digestion but at the same time when in excess can bring potential hazards like mucosal erosions, gastritis, and ulceration.

Analysis of Amlapitta In Terms of Modern Patho-Physiology

The two main acid - related diseases are¹³,

1. Gastro oesophageal reflux disease (GERD) and
2. Peptic ulcer disease (PUD).

Reflux is the retrograde flow of gastroduodenal contents. It is interesting to note that reflux can be a normal physiology as in infants, but when it becomes frequent or troublesome it becomes a disease¹⁴. Similarly, Udgāra is a normal function of prāna vāta, but when it becomes amla or tikta it is considered as a vyādhi lakṣaṇa. The refluxate may contain acidic gastric contents, pepsin, bile salts and pancreatic enzymes. Mādhavakāra includes tikta udgāra as a symptom – can be justified as there is possibility of the presence of bile content in the refluxate. The applicability of kshara¹⁵ in managing such cases of reflux need to be rethought.

The Brazilian consensus conference defines GERD –“a chronic disorder related to the retrograde flow of gastroduodenal contents into the oesophagus and /or adjacent organs resulting in a spectrum of symptoms with or without tissue damage”¹⁶. Anatomical and functional changes in the stomach, gastro-oesophageal junction, and lower oesophageal sphincter along with the nervous system are involved in the mechanism of reflux. Transient lower oesophageal sphincter relaxation (TLESR) and GERD associated with a hiatus hernia can be considered as the defects of adhiṣṭāna ie āmāśaya. Samāna Vāta is responsible for normal intestinal motility as it retains and propagates the food under digestion. The concept of impairment of samāna vāta as a cause for amlapitta is similar to the concept of delayed gastric emptying (neurological origin) as a cause for acid related diseases.

GERD has extra-oesophageal as well as oesophageal symptoms. Heartburn, regurgitation, and difficulty in swallowing are the most common GERD symptoms¹⁷. Retrosternal or substernal pain, vomiting, poor weight gain are also seen associated with GERD. The extra-oesophageal symptoms include cough, sore throat, and hoarseness of voice, asthma and dental erosions. There is also proposed association between sinusitis, otitis media, idiopathic pulmonary fibrosis, and GERD¹⁸. GERD is a common cause of unexplained sleep disturbance. It can also manifest as angina-like pain radiating to the back, neck, jaw, or arms, hypersalivation, globus sensation (perception of a constant lump in the throat).

A wide range of manifestations is mentioned in Amlapitta also. Avipāka, hṛt- kanṭha dāha, amlōdgāra are the common symptoms of Amlapitta. According to Mādhavakāra, Avipāka-indigestion, Klama – fatigue without activity, utklēśa, tikta/ amla udgāra- sour or bitter reflux, hṛt kanṭha dāha – heart burn/ throat irritation, Aruci-aversion to food are the main symptoms of amlapitta¹⁹. He also warns about the confusing nature of atypical presentations of amlapitta of various dōṣa predominance²⁰.

Acid peptic diseases result from overlapping pathogenic mechanisms involving acid related harms as well as the diminished mucosal defense to acid. Peptic ulcer occurs when there is a histologically defined mucosal defect²¹. The role of excessive Amlata in the excessive vilayana of klēdaka kapha may be associated in this context. Prolonged exposure to gastric contents may bring about tissue level injury-including trophic changes in the mucosa. This is nothing but kāya śithilīkaraṇa effect of amla rasa.

Neurotransmitters histamine (H2), acetylcholine and the peptide hormone gastrin are the primary stimulators of acid secretion²². Gastrin is a mealtime stimulator of acid secretion and delays gastric emptying. It in turn favours the release of stored histamine. This could explain the role of specific food in stimulation of acid secretion. Those food items, which can excessively stimulate the secretion of gastrin, may cause hyperacidity. Several specific food items like kulatha, bhṛṣṭa dhānya, madya, amla rasa are mentioned as āharaṇa nidāna of amlapitta. The exact relation between such food items and gastric secretions need to be studied. In addition, specific dietary regimen is advised in amlapitta.

Histamine 2 is released during non - feeding time. Histamine release may be influenced by eating habits (frequent meals, fasting), which determine the spacing between meals. Several eating habits like adhyaśana (eating repeatedly before previous meal digests), kshut vēgadhāraṇa (fasting) etc are mentioned as amlapitta nidāna. Acetylcholine is a neurotransmitter. It shows the link between the Enteric Nervous System (ENS) and acid secretion. Psychological co morbidities can cause ENS abnormalities and can bring acidic environment in the stomach. Emotional stresses like krōdha (anger) and śōka (grief) are specific nidāna for pitta and vāta vitiation respectively and in turn cause amlapitta.

Vit bhēda or loose stool is a symptom of amlapitta. Prolonged hyperacidity may induce a decreased level of gastrin (negative feedback)²², which in turn may cause increased gastric motility. Gastrin is an inhibitor of gastric motility.

CONCLUSION

Amlapitta need not be a disease of pitta alone even if the term sounds so. Any other disruption in the digestive physiology involving vāta or kapha, can also result in amlapitta. Upāśaya can help the clinician in assessing the dōṣa vikalpa. The overall picture of physiology and pathogenesis of amlapitta makes it clear that Āyurvēda has a strong foundation in disease pathology. It is desirable to make consensus in the concepts of pathologic mechanisms in other streams of sciences and that in Ayurveda rather than making one to one correlation of diagnoses.

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