

ROLE OF AMA IN THE MANIFESTATION OF THE DISEASE: A CRITICAL REVIEW

Ayurveda

Bhawna Bhardwaj*	BAMS, M.D. Scholar, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005. *Corresponding Author
Nitin Jindal	M.D., Assistant Professor, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005.
Manoj Shamkuwar	M.D., PhD, Head of Department, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005.
Leena Gautam	BAMS, M.D. Scholar, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005.
Divya Panchal	BAMS, M.D. Scholar, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005.
Pritosh Sundar Moharana	BAMS, M.D. Scholar, Department of Panchakarma, A and U Tibbia College and Hospital, Karol Bagh, Delhi-110005.

ABSTRACT

The Amaya, derived from the term Ama, is one of the disease's synonyms. Ama is a partial Rasa dhatu that executes role in the disease manifestation. With the help of Kriyakaal, one can learn about the pathogenesis of the relationship between Ama and Vyadhi. In the Samhitas, Madhav nidana, and other Ayurvedic literature provide the detailed knowledge of Ama and its related diseases well explained. Ama is a toxin produced by an unhealthy lifestyle and mental health, resulting in a variety of gastrointestinal and systemic diseases. The waste generated by the cells must be filtered and emptied on a regular basis. Ama is a substance that accumulates in the body as a result of a poor diet and lifestyle. When digestion is compromised, food sits in the stomach and rots due to bacterial fermentation. In people with obesity and diabetes, toxic trace element accumulation in the body is linked to metabolic disorders that cause obesity, as well as higher energy intake. The presence of Ama in the body must be determined in order to live a healthy lifestyle and manage and prevent diseases.

KEYWORDS

Ama, Vyadhi, Shat kriyakaal, Agni, Saama dhatu, toxins.

INTRODUCTION

The equilibrium of Dosha-Dhatu-Mala results in health, whereas its alteration gives rise to disease.¹ The term Amaya is one of the synonyms for disease, implying that when there is ama in the body, the disease manifested.² The meaning of Ama is raw or uncooked or partially cooked or partially digested. Due to a malfunction of the Jathragni (digestive fire), the food is not completely transformed into Aahar rasa(chyme), and thus no proper synthesis of the first Dhatu(tissue), Rasa Dhatu, occurs. Ama is the name given to this malformed Rasa dhatu.³ This undigested Aahar rasa spreads into the whole body along with the circulation of Rasa Dhatu. It induces Kleda(moisture) and obstruction in various Dhatus and Srotas(body channels), leading to various ailments. Ama plays an important role in disorders such as Amavata (rheumatoid arthritis), Sthoulya(obesity), Visuchika(cholera), Atisara(diarrhoea), Grahani(malabsorption disorder), Pandu(anemia), and others. Without a thorough understanding of pathology, it is impossible to acquire the necessary knowledge to correct these amaya diseases. As a result, removing Ama is one of the most important steps in the treatment of various disorders.⁵

AIMS AND OBJECTIVES

To study the concept of Ama dosha as per ayurvedic classical text as well as modern literature.

To study the relationship between Ama and disease as per ayurvedic classics.

MATERIALS AND METHODS:

Materials related to Ama and other related topics have been gathered from Brihat trayi, Madhava nidana, and commentaries on these Samhitas, Ayurvedic texts book on Ama. The references were compiled, analysed, and discussed for a thorough and in-depth understanding of the concept of Ama, metabolism, and toxins. From related websites, modern medical literature as well as other related information were gathered.

Ama – concept

Indigestion is driven by etiological factors such as incompatible food consumption, a sedentary lifestyle, hefty meals, and unctuous foodstuffs. Stress, grief, fear, rage, and lack of sleep are all indirect

triggers of dyspepsia and Agni impairment⁶. Because the Agni is weakened, it is unable to correctly digest little amounts of food, and those faulty food items become acidic in nature and serve as poison⁷. Ama incorporates aspects such as liquid, heavy, diverse colours, unctuous, sticky, unpleasant odour, thread-like, and is the origin of all illnesses⁸.

Pathogenesis of Ama

During food digestion, Jathragni is the first to digest it, followed by Bhootagni, and finally Dhatvagni. All seven types of Dhatvagni act on the Aahar rasa, separating it into Kitta (waste product) and Prasad (nutritive product).

The use of etiological factors weakens the Jathragni and causes the formation of partial digested food Ama rasa, which obstructs the action of the Bhootagni, resulting in a reduction in the conversion of Vijatiya (incompatible with tissue) dravya into Sajatiya (compatible with tissue) dravya. When this ama rasa comes into contact with the Dhatvagni, it digests, but at this point, the production of Ama and Mala has increased⁹.

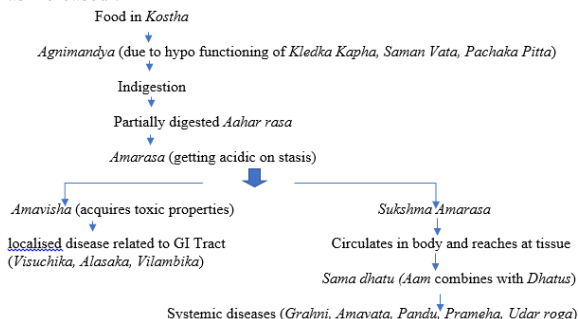


Figure no.1: Pathogenesis of disease related to Amadosha¹²

When this food poison interacts with the Pitta dosha, it causes symptoms such as burning, thirst, mouth ulcers, and acidity. When it combines with the Kapha dosha, it causes symptoms such as colds, coughs, and urinary infections, and when it combines with the Vata dosha, it causes various types of vata diseases¹⁰.

With the help of Vyaan vata there is a proper distribution of this partially formed Rasa dhatu in whole body simultaneously when this complete process is ongoing Khaivaigunya in the Rasavaha srotas is present then that ama rasa stops there and leads to the manifestation of disease¹¹.

Relationship of Ama dosha and disease manifestation

To comprehend the role of ama in disease manifestation, one must first apprehend the pathology of the disease through using Shat Kriyakalash treatment options. The stages of disease aid in properly diagnosing and curing the disease while it is still mild, restricting it from advancing to a more severe stage.

Sanchaya (accumulation), Prakopa (excitation), Prasara (expansion), Sthanasamsharaya (occupy the place), Vyakta (disease), and Bheda avastha (complications) are the six opportunities¹³. The first stage is the Sanchaya means "to collect" or "to gather." The doshas are gathered, but in their own position, in Sanchaya avastha, and the person has queasy responses towards the factors that are the responsible of that particular aggravated dosha and liking towards the factors which are opposite in nature of that dosha¹⁴.

The second stage i.e. Prakopa avastha means the accumulation of doshas but they tend toward the opposite route or leaving their own place. The Unmarga gamita stage of Prakopa refers to the doshas' predilection to leave their original location.

There are two different types of this stage: -Sanchaya Prakopa is a term that refers to a gradual increase in doshas and Achaya Prakopa is that without passing through chaya avastha Doshas go ahead and move to the Prakopa stage¹⁵. The second type of Prakopa is called Pathya nimittaja prakopa because it has a doshaprakopa despite following all ritucharya rules. Sanchaya prakopa is treated with Samshodhan (purification), while achaya prakopa is treated with samsaman chikitsa (palliative treatment)¹⁶.

The third chance of treatment i.e. Prasara avastha is the third stage in which aggravated doshas leave their original location and spread throughout the body via Srotas, similar to how rice, flour, and water mixed together and placed in a container grow in quantity and overflow from the vessel's side¹⁷.

The fourth chance of treatment i.e. Sthanasamsharaya It is a prodromal stage in which the disease has not yet appeared, wherever Srotakhaivaigunya(defect in body channels) is present, vitiated doshas in circulation settle. Because the aggravated dosha has spread to other places of the body, it has been localised, signifying the onset of diseases associated with those sthanas¹⁸. In Amavata the ama dosha combines with the Kapha dosha, which has properties similar of ama and gets seated in the multiple joints and obstructs the pathway of Vata dosha.

Sanchaya (Ama dosha accumulate but remain in Amashaya)

Prakopa (vitiation of the aggravated Ama dosha)

Prasara (vitiated ama doshas leave the Amashaya and travel across the body via Srotas)

Sthanasamsharaya (vitiated Ama doshas in circulation settle wherever defect in the body channel is present indicating the onset of diseases linked with those sites)

Vyakti (the illness reveals itself- such as Amavata, Grahni, Amalpitta, Pandu, etc are appeared)

Bheda (if these Amaja disease are not treated, then appearance of complications or deformity)

Figure no.2- pathogenesis by Shat kriyakal

In fifth stage, the illness reveals itself, known as Vyakti. If etiological factors continue, the dosha progresses to the Vyakti stage. This stage can be described as the manifestation of a completely formed disease- Vyadhi darshana, signifying the arrival of all markers and symptoms of the disease¹⁹. For example, in Amalpitta, the increase in Drava guna of pitta dosha associated with ama dosha produces the symptoms such as vomiting of green, yellow, black, bright red coloured sour material, resembling mutton wash, belching, burning sensation in throat, chest and upper abdomen, headache, loss of appetite, etc. The symptoms of amavata shows as bodyache, anorexia, laziness, heaviness, thirst, indigestion etc.

The last stage of Kriyakal is Bhedavastha (complication) is a sickness that gives rise to another ailment or diseases known as Updrava. In the case of Udara, the complications are vomiting, diarrhoea, thirst, dyspnea, weakness, and in the case of wound, the scar mark is the

complication²⁰.

Clinical features of Sama dosha

The properties of Ama reflects the behaviour of it at each level of cells in the body and produce the symptoms such as Srotorodh (clogging of body channels), Balabhransha (lack of energy), Gaurava (heaviness in the body or body part), Anila mudhata (abnormal flow of vata), Alasya(physical tiredness) Klama(mental tiredness), Apakti (indigestion), Nisthiva(salivation), Malasanga (obstruction of urine & stool and other waste products), Aruchi (lack of desire for food)²¹.

Table no-1 Symptomatic Pathology^{22,23}

Symptoms	Pathogenesis
Srotoavarodha (obstruction in bodychannel s)	The sticky nature of Ama, remains attached to the Srotas, obstructing the flow of Vata, blockage induced by Ama produces joint stiffness as seen in the Amavata. It clings to blood vessels, causing atherosclerosis, also reduces blood flow and causing ischemia.
Bahumutrata (polyurea)	Because of the overall poor functioning of the Agni, the production of excretory materials increased, causing changes in hemodynamic status, putting more strain on the kidney to eliminate them, resulting in increased micturition frequency.
Swedavarodha (lack of perspiration)	Due to increased viscosity in the blood in Ama conditions, it vitiates the Vyana Vata, which governs circulation in the body through the circulatory system, and constricts the capillaries supplying the sweat glands.
Balabhrams a (lack of strength)	Ojas is the essence of all Dhatus and is the source of body strength. It does not form properly due to a lack of Dhatu overall nutrition. As a result, the body's immune system weakens, making it more susceptible to infection.
Gourava (heaviness in body)	When Ama rasa is in circulation, it reduces oxidation, physical activity, and cerebral blood flow, slowing organ function and causing a feeling of heaviness.
Anila mudhata (abnormal flow of vata)	If there is a loss of normal Vata movements within the channels, Anila mudhata can be translated as sluggishness of Vata functions. For example, if Vata's normal movements are obstructed, it manifests as eructation through the mouth.
Alasya and Klama	Alasya is defined as a lack of motivation or enthusiasm for work despite having sufficient energy, and Klama is defined as excessive tiredness without doing any physical work. The improperly formed Rasa dhatu impairs the function of providing nutrition to the senses, and increased blood viscosity causes slow cerebral blood flow, which can cause Alasya and Klama.
Nisthivana (increased salivation)	As the Rasa dhavtagni is hypofunctioning, due to its similarity, increased mala accumulates in places of Kapha. As a result, the secretions in the chest region increase, causing spitting reflex.
Tandra (drowsiness)	Tandra, is caused by a reduction in blood flow to the cerebrum, which supplies less nutrition, oxygen, and carbon dioxide.

DISCUSSION

The primary reason for the disease is Pragyaparadh (intellectual error), which leads to misuse of the mind, senses, and time²⁴. Mistakes of the senses can lead to sensory desire being overpowered, which is typically evident in overeating, junk food, or the use of only one type of food whereas mistakes of time refer to not eating according to the seasons, or not adjusting one's diet according to the seasons. These blunders result in a poor diet, poor eating habits, overeating, unneeded desires, and an incorrect lifestyle. This causes an aggravation of Vata, Pitta, and Kapha, as well as an imbalance in the body's channels and a weak Agni, which results in ama. Toxins are symbolized by the concept of ama²⁵. Toxins can come from a multitude of sources, including your body, food, microbes, and the environment. Various chemicals and heavy metals have recently polluted the air and water, poisoning food and damaging human health as a result of increased industry. Heavy metals and persistent organic pollutants are the most common environmental pollutants given through food (POPs)²⁶. The cells produce waste that must be filtered and emptied on a regular basis. When the lymphatic system is clogged or circulation is deficient, then the natural elimination mechanisms may be affected. The lymphatic

system's dysfunction can cause changes in lipid transport and fat deposition, as well as lymphedema and the progression of the metabolic risk factors that impact metabolic syndrome²⁷. With an unhealthy lifestyle, Ama acts as silt that builds up in the body. Food rests in your stomach and tends to rot owing to bacterial fermentation when your digestion is weak or faulty (typically due to poor diet choices over time). Because it includes endotoxins created by bacteria, this decaying food is toxic to your entire body. Toxic trace element accumulation in the body is linked to metabolic disorders that cause overweight or obesity, as well as higher energy intake in people with obesity and diabetes. Furthermore, the diets of obese people frequently lead to an imbalance of trace nutrients, and adequate vitamin and mineral intake has been emphasized in the management of obesity²⁸. Noncommunicable diseases (NCDs) like obesity, diabetes, cancer, cardiovascular disease, and chronic respiratory disease have all been related to prolonged exposure to and the build-up of these pollutants²⁹.

CONCLUSION

Ama is a toxin produced by an unhealthy lifestyle and mental health, resulting in a variety of gastrointestinal and systemic diseases. Amavata, Grahani, Amalpitta, Atisar, Vishuchika, autoimmune disease, allergic disorders, skin disorders, and metabolic diseases are examples of Ama related diseases. Due to the hypofunction of each tissue Agni, Ama formation at each tissue level is possible. Because of its hypofunction, Ama at the appropriate Dhatvagni must be the source of all hormonal and enzymatic deficiencies. Shatkriyakaal explains clearly the pathogenesis of Ama as well as its role in disease manifestation. At the Dhatvagni level, Sama Dhatu develops, where it is absorbed and spreads to other tissues, causing diseases such as obesity, diabetes, hypothyroidism, malabsorption disorder, and others. Insights into the role of ama in the manifestation of diseases helps to break the disease cycle and also helps in the prevention of the same.

REFERENCES

- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 15., Ver. 3.* Varanasi: Chaukhambha Sanskrit Sansthan. P.73.
- Byadgi PS.(2007). *Srotas: Parameswarappa's Ayurvediya Vikriti Vigyan & Roga Vigyan. 1st ed.* Varanasi: Chaukhambha Sanskrit Sansthan.
- Raja radhakanta deva: sabdhakalpadma, part 1, Varanasi: chawkhambha Sanskrit series office, p. 180.
- Brahmanand Tripathi(2012). editor, Hindi commentary of Nirmala on Astanga Hrdayam of Vagbhata, Sutra sthana, Ch.13 Ver. 25. Varanasi: Chaukhambha Sanskrit Sansthan. p.188.
- Saini N, Byadgi PS(2014). Clinical Assessment Criteria for Ama Diagnosis. *J Homeop Ayurv Med* 3: 148. doi:10.4172/2167-1206.1000148
- Kashinath P, Gorakhnath C(2018). editors, Hindi Commentary of Vidyotini on Charaka Samhita of Agnivesha, Viman Sthana. Ch. 2., Ver. 9. Varanasi: Chaukhambha Bharti Academy; p. 458.
- Kashinath P, Gorakhnath C(2018). editors, Hindi Commentary of Vidyotini on Charaka Samhita of Agnivesha, Chikitsa Sthana. Ch. 15., Ver. 43. Varanasi: Chaukhambha Bharti Academy; p. 460.
- Arundutta(2018). Sarvanga sundara commentary on Astanga Hrdaya, Ch. 13., Ver.27, Varanasi: Chaukhambha Orientalia; p. 604.
- Kashinath P, Gorakhnath C(2018). editors, Hindi Commentary of Vidyotini on Charaka Samhita of Agnivesha, Chikitsa Sthana. Ch. 15., Ver. 13-16. Varanasi: Chaukhambha Bharti Academy; p. 455.
- Kashinath P, Gorakhnath C(2018). editors, Hindi Commentary of Vidyotini on Charaka Samhita of Agnivesha, Chikitsa Sthana. Ch. 15., Ver. 49-52. Varanasi: Chaukhambha Bharti Academy. p. 460.
- Kashinath P, Gorakhnath C(2018). editors, Hindi Commentary of Vidyotini on Charaka Samhita of Agnivesha, Chikitsa Sthana. Ch. 15., Ver. 36. Varanasi: Chaukhambha Bharti Academy; p. 458.
- Dr. M. Srinivasulu(2016). Concept of ama in ayurveda, Ch. 3, 3rd ed. Varanasi: Choukhamba Sanskrit series office; P. 40.
- Brahmanand Tripathi, editor(2012). Hindi commentary of Nirmala on astanga hrdayam of vagbhata, sutra sthana, Ch.12 Ver. 22-23. Varanasi:Chaukhambha Sanskrit Sansthan. p.175.
- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 21., Ver. 19.* Varanasi: Chaukhambha Sanskrit Sansthan, P. 118.
- Harishchandra Kushwaha(2018). editor, hindi commentary of kusumprabha on astanga hrdayam of vagbhata, sutra sthana, ch 3 ver. 18. Varanasi:Chaukhambha Orientalia; P. 120.
- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 21., Ver. 28.* Varanasi: Chaukhambha Sanskrit Sansthan. P. 119.
- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 21., Ver. 33.* Varanasi: Chaukhambha Sanskrit Sansthan. P. 120.
- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 21., Ver. 34.* Varanasi:Chaukhambha Sanskrit Sansthan; P. 121.
- Ambikadutta shastri(2016). *Susrut Samhita of Susruta, sutra sthana, Ch. 21., Ver. 35.* Varanasi: Chaukhambha Sanskrit Sansthan.p. 121.
- Brahmanand Tripathi(2012). editor, hindi commentary of Nirmala on astanga hrdayam of vagbhata, sutra sthana, Ch.13 Ver. 23. Varanasi: Chaukhambha Sanskrit Sansthan;.p. 188.
- Dr. M. Srinivasulu(2016). Concept of ama in ayurveda, Ch. 5, 3rd ed. Varanasi: Choukhamba Sanskrit series office; p. 73-76.
- Saini N, Byadgi PS (2014) Clinical Assessment Criteria for Ama Diagnosis. *J Homeop Ayurv Med* 3: 148. doi:10.4172/2167-1206.1000148
- Brahmanand Tripathi(2012). editor, hindi commentary of Nirmala on astanga hrdayam of vagbhata, sutra sthana, Ch.1 Ver. 19. Varanasi:Chaukhambha Sanskrit Sansthan. p. 15.
- Manohar PR(2012). Critical review and validation of the concept of Ama. *Anc Sci Life*;32(2):67-68. doi:10.4103/0257-7941.118524.
- Kelly BC, Ikonomou MG, Blair JD, Morin AE, Gobas FAPC (2007). Food web-specific biomagnification of persistent organic pollutants. *Science*;317:236-9

- Chakraborty S, Zawieja S, Wang W, Zawieja DC, Muthuchamy M(2010). Lymphatic system: a vital link between metabolic syndrome and inflammation. *Ann N Y Acad Sci*;1207 Suppl 1(Suppl 1):E94-E102. doi:10.1111/j.1749-6632.2010.05752.x
- Skalnaya MG, Demidov VA(2007). Hair trace element contents in women with obesity and type 2 diabetes. *J Trace Elem Med Biol*. 21:59-61.
- Lee DH, Porta M, Jacobs DR, Vandenberg LN(2014). Chlorinated persistent organic pollutants, obesity, and type 2 diabetes. *Endocr Rev*;35:557-601.