



AMA (UNDIGESTED FOOD) AND ITS CLINICAL SIGNIFICANCE: AN OVERVIEW

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ABSTRACT:

Abstract: The aim of *Ayurveda* focuses on maintaining normal health. The primary approach of *Ayurveda* encompasses the diagnosis and treatment of disease. *Ama* is a pathological condition, which occurs due to the improper functioning of *Agni*; *Ama* is considered as a main causative factor in various diseases. *Ama* is produced due to the improper digestion of the food particle and due to the accumulation of *mala*, which is considered *Pratham doshadusti*. (First vitiation of *dosha*) proper diagnosis requires complete knowledge of disease causative factors; *Ama* is one of the entities which is considered responsible for many diseases like; *Sthaulya* (obesity), *Tamaka shwasa* (Bronchial Asthma) *Grahani roga* (irritable bowel syndrome) and *Amavata* (Rheumatoid arthritis), etc. This *Ama* produces *Ama dosha* in which *Tridosha*, *Dhatus*, and *Malas* become permeated with *Ama* produced in the *Amashaya* which results in the generation of various diseases. In this context, we are going to discuss the clinical significance of *Ama* in various diseases.

Key Words: *Ama*, *Doshadusti*, *Tridosha*, *Mala*, *Dhatu*

INTRODUCTION:

Ama is a term used in Ayurveda, to describe the accumulation of toxins and waste products in the body. The accumulation of *Ama* in the body is one of the Primary causes of disease and illness. ^[1]In the *Astang Hardiya Samhita* *Ama* is described as a sticky, heavy substance that is produced because of incomplete digestion. It is believed to be the cause of various diseases, including joint pain, digestive problems, and skin disorders. *Ama* is an important concept in *Ayurveda* that emphasizes the importance of proper digestion and elimination for optimal health and wellness. ^[2]Due to the poor strength of *Agni* (*Jatharagni*), initial *Rasadhatu* becomes immature and improperly metabolized and this unmetabolized substance *Annarasa* (digestive juice) is still left in the stomach known as *Ama*. ^[3]*Ama* is undigested, unproperly unprocessed, consisting of heavy, unctuous liquid, sticky, fibrous material which has foul smelling & become the cause of weakness, debility to the body, and many diseases. The term *Ama* is derived from the root “Am” with the suffix “ninj” which means, ‘the substance which undergoes digestion and associated changes is *Ama*. In which substances produce pain or create pressure on *Srotomukha* and accumulate on the

Srotomukha (opening of channels) is called *Ama*. *Agni* at different levels can be produced *Ama* at different sites in the body.

1. *Jatharagnimandya janya Ama*: When the function of *jatharagni* is impaired, the ingested food is not digested properly and *Ama* is Produced. This *Ama* can be divided into four types *Annarasa rupa Ama* (unmetabolized digestive juice), *Adyaaharadhatu rupa Ama*, *Rasashesa rupa Ama*, and *Malasanchaya rupa Ama*.

2. *Annarasa rupa* - If the function of *Agni* is not proper, the food will not be digested properly and this improperly digested food undergoes the process of fermentation and act like poison for the body. ^[4]This fermented *Annarasa* when comes out from the upper passage is called *Chhardi* and if from the lower passage known as *Atisara* and the combined condition is known as *Visuchika*.

3. *Adyaaharadhatu rupa Ama*: When the food is digested improperly and the outcome of this improperly digested food is absorbed, it is known as *Adyaaharadhatu rupa Ama*. (firstly unmetabolized food). ^[5]This absorbed *Ama* then circulates in *Rasavahastrotas*. If it is metabolized by *Rasagni* it gets cured and if not it leads to the *Mandyata* of *rasagni*. This is seen in the *Samprapti* of *Jwara*.

4. *Rasashesa rupa Ama*: Due to excessive intake of food or hypofunction of *Agni*, food is not digested completely (in terms of quantity, not quality). This remaining food is termed as *Rasashesa rupa Ama*. This leads to the *Samprapti of Rasashesa Ajirna*.

5. *Malasanchaya rupa Ama*: The action of *Jatharagni* is the division of *Ahara* into *Prasada* and *Kitta* part. If *Prasada* is not properly formed due to hypofunction of *Agni* it leads to *Annarasa rupa Ama* or *Adyaahardhatu rupa Ama*. The *Kitta* produced by the normal function of *Agni* has its role in the normal physiology of the body. But improperly formed *Kitta* or *Mala* does not perform its normal physiological functions and is difficult to be thrown out from the body. This retained *Mala* is then termed as *Malasanchaya rupa Ama*. This condition found in *Alasaka*.

6. *Bhutagni mandya janya Ama*: The digestion of food by *Jatharagni* results in the breakdown of food into five physicochemical groups i.e. *Panchabhutas* viz. *Parthiva*, *Apya*, *Tejas*, *Vayavya*, and *Nabhasa*. This *Bhutagni* then converts the respective portion into assimilable form. If the function of *Bhutagni* is not proper, at this stage *Ama* would be produced is called *Bhutagni mandya janya Ama*.

7. *Dhatwagni mandya janya Ama*: According to Vagbhatta the components of *Pachakagni* when situated in the *Dhatus* are termed as *Dhatwagnis*. The seven *Dhatwagnis* are *Rasagni*, *Raktagni*, *Mamsagni*, *Medagni*, *Asthyagni*, *Majjagni*, and *Shukragni*. These perform the metabolic transformation of nutrients into assimilable and removable moieties.

Relation of Dosha with Aam:

***Shareerika Dosh*:** Ayurved mentioned three *Dosha* in body. *Prakupitta doshas* mix with *Aam* and produces its *Sama Avashtha*. Symptoms of each *Dosha* according to *Sama* and *Niram avashtha* also mentioned in *Samhita*.

***Mansika Dosh* :** *Raja* & *Tama* are *Mansik dosha*. As we know all physical effect of disease do effect on mind and vice versa. *Aam* is also affected on our mind. Its effect on quality of consciousness in such case increasing *Satva guna* is part of treatment.

Classification of Ama:

Ama produced due to hypo functioning of *Agni*.

(i) *Ama* due to *Jatharagni mandya*.

(ii) *Ama* due to *Dhatvagni mandya*.

(iii) *Ama* due to *Bhutvagni mandya*.

Table 1 Amoutpadaka Hetu: (causing factors for the production of Ama)

S.No.	Aharaja	Viharaja	^[6] Mansika	Others
1.	Abhojanat(Not taking food)	Virrudha chestha	Kama	Improper management of Panchkarma
2.	Atibhojnata	Nishchalata	Krodha	Incompatibility of season
3.	Adhashaynat	Diwaswapa	Lobha	
4.	Vishamanshana	Ratrijagrana	Moha	
5.	Virudhashana	Vega Vidharana	Irshya	
6.		Ativyavaaya Ama	Bhaya	
7.		Shayan	Shoka	
8.		Vyayam	Chinta	
9.		Vishama	Deenta	
10.		Shayaya		
11.		Snigdha bhojnotra		

Pathogenesis of Ama:

It is being able to vitiate with *Doshas*, *Dushyas*, *Malas* and responsible for the disease production. *Ama* circulates along with *Rasa Dhatu* and accumulate in the place where it gets obstructed (*Srotoabrodha*) and become the site of origin of the disease.^[7] *Ama* also

become *Nidanarthaka* factor to produce '*Khavaigunya*' in any of the *Srotas* and make the seat for '*Sthana Samashrya*' of provoked *Doshya* and they get conjugated at this place i.e., *Doshadushya samruchana* takes place.



Flow chart-1: Pathogenesis of Ama:

Lakshana of Ama:

1.^[8]Srotorodha: It means clogging of channels, *Srotorodha* may involve whole body or a particular *Srotas*. It can be understood as blockage in the existing route of *Dosha*, *Dhatu*s and *Malas* etc. As *Ama* is sticky in nature due to which it has tendency to stick in the channels of *Dosha*, *Dhatu*s and *Mala* in the body and produced symptoms accordingly. In *Amavata* obstruction of *Vata* due to *Ama* causes stiffness in joint. Due to stickiness of *Ama* it sticks in the blood vessels and causes atherosclerosis. In *Ashmari* (stone) which causes obstruction of urine.

2. Balabhransha: *Bala* means capacity to do exercise, *Ojas* is also considered as *Bala*. It can be understood in both ways as the first being is unable to do anything due to less power and get fatigue. Another is decreased strength of immunity. Due to the clogging of channels, nutrition of *Dhatu*s decrease as a result proper *Dhatu*s do not form.

3. Gaurava: It means heaviness in the body. It may be due to excess storage of *Ama* with its *Guru guna*. When *Ama rasa* remains in circulation, less physical activity, which slows down the function of organs, leading to feeling of heaviness in the body. It may be due to *Mandagni* of *Dhatu*s and decrease in *Jatharagni* during *Ama* condition.

4. Anila mudhata: Abnormal or obstructive flow of *Vata* inside the channels or it can be interpreted as sluggishness of function of *Vata*. When *Vata* gets obstructed by *Ama* causes stiffness in the joint.

5. Alasya & Klama: It means lack of enthusiasm to do work in spite of having energy or lack of desire to do anything. *Ama* has tendency to vitiate *Kapha* quickly due to their similarity in nature; hence patients develop *Alasya* and *Klama* due to abnormal *Kapha*.

6. Apakti: It means indigestion. *Mandagni* causes lack of secretion of digestive enzymes. Due to diminished function of bio-digestive fire (*Jatharagni*) food cannot be digested and all undigested food remains converted into *Ama*.

7. Nisthiva: Due to decrease in *Rasadhatvagni* it produces more *Rasa dhatu mala* called *Dusta kapha*. This increased *Dushta kapha* accumulates in *Kapha sthana* like *Urasthan* causing reflex of spitting, resulting excessive sticky salivation called *Kapha nisthiva*.

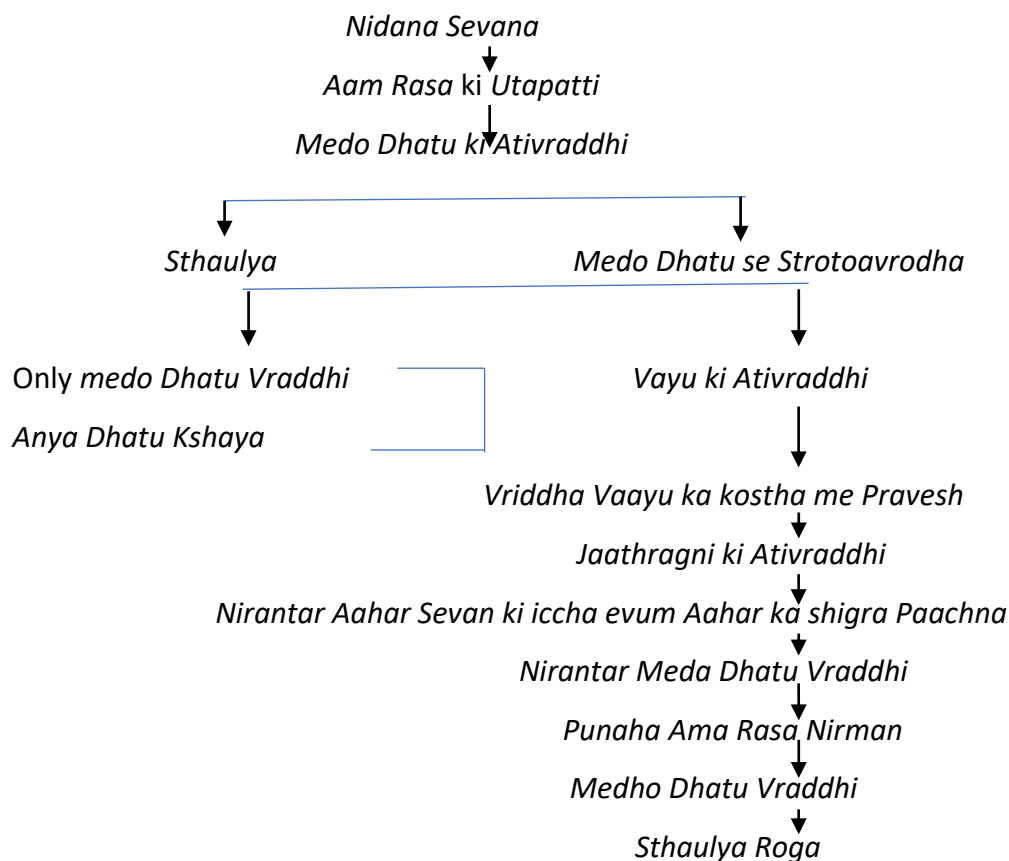
8. Malasanga: Obstruction of urine & stool and other waste product in the body is called *Malasanga*. There is obstruction in the passage of waste substances; abnormal accumulation of waste in the body is a sign of *Ama*.

9.Aruchi: It is the condition in which there is lack of desire towards food. It may due to *Ama* which causes less secretion of digestive enzymes and obstruction in channel.

Role of *Ama* in the Pathogenesis of Some Diseases:

(a)^[9]*Ama* in *Sthaulya* (Obesity): *Sthaulya* is a predominant metabolic disorder. *Acharya Charaka* has described *sthaulya* in *Ashtauninditiya adhyaya*. Absence of physical activity, sleeping during day and intake of food

which increases *Kapha*, make the end product of digestion to become sweet which in turn increases *Meda dhatu* and *Ama*. *Ama* is one of the causative factor of obesity in certain instances since it obstruction of *Srotas* causes *Prakopa* of *Vata*, this *Prakupita Vata dosha* increases *Agni* which enhances appetite resulted condition like; obesity.

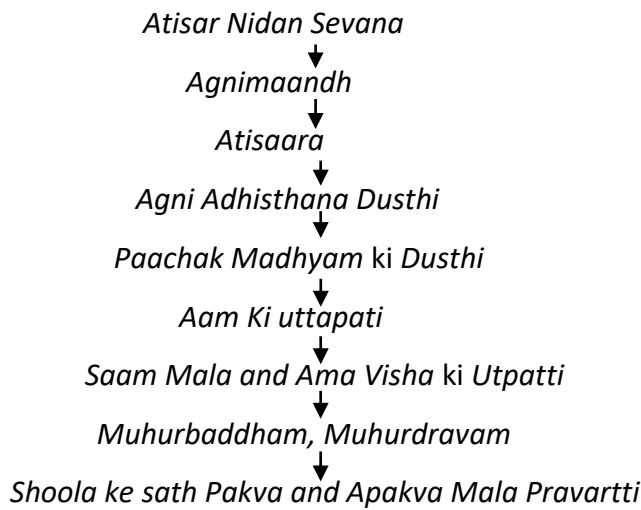


Flow chart 2: Pathogenesis of *Sthaulya*:

(b)*Ama* in *Grahani Roga*: *Grahani* is a disease of gastrointestinal tract and has become very common now a days due to the indiscipline life style, excessive consumption of fast food, eating during indigestion, overeating, irregular eating,

heavy, cold, rough and contaminated food, suppression of natural urges, *Diwasvapana* and *Vega Vidharana* ;responsible for vitiation of *Dosha* and *Agni dusti*.*Agni Dushti* leads to production

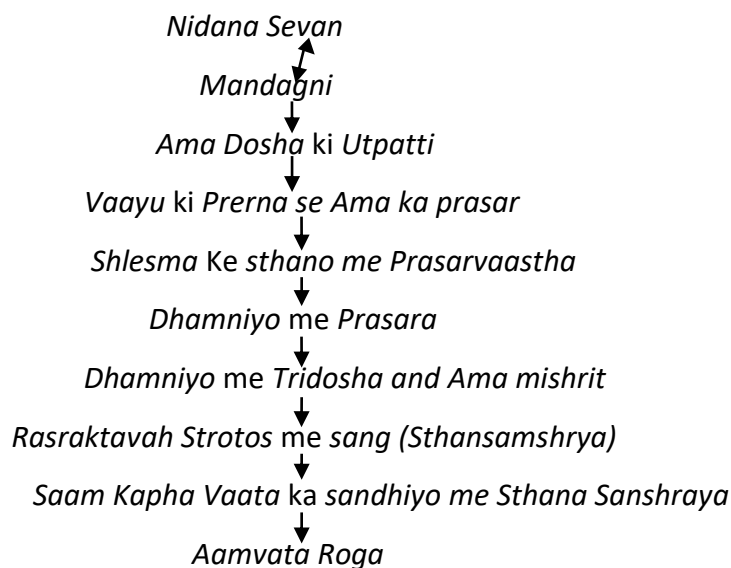
of *Ama* and disease prognosis^[10]. *Ama* plays a significant role in *Samprapti* of *Grahani roga*.



Flow chart-3 Pathogenesis of *Grahani*

(c)^[11] ***Ama* in *amavata***: Abnormal functioning of *Agni* result in improper digestion and immature *Rasa* in the *Amashaya* which undergoes fermentation. *Ama* which absorbed in the system and taken up by the aggravated and vitiated *Vayu* specially to the *Kapha Sthanas* mainly *Amasaya*, *Sandhi*, *Uras*,

Kantha etc. This circulatory *Ama* along with *Vata* gets aggravated and enters *Kostha*, *Sandhi* leads to loss of taste, thirst, lack of enthusiasm, fever, stiffness, heaviness in the body. *Ama* is accumulated in the joint leads to joint movement restriction, pain, tenderness and swelling in joint resulted *Amavata*



Flow chart-4: Pathogenesis of *Amavata*:

(d)^[12] Ama in Tamak Swas:

Tamaka Shwas is a disease of *Pranavaha srotas*. This disease arises due to the dust, smoke and wind residing the cold place and using cold water, physical exertion, irregular meals, excessive intake of *Guru*, *Abhishyandi* and *Sleshmic ahara* which causes *Agnimandya* which leads vitiates *Jatharagni* resulted formation of *Ama*. Various types of *Srotodushti* present in *Tamaka Shwas* due to *Ama*, which are *Sanga*, *Vimargagamana* and *Atipravritti*. Obstruction to the *Vata* occurs in *Pranavaha Srotas* due to *Ama* leads to the narrowing of airways and *vayu* gets vitiated with *Ama* resulted *Stambha* and *Sankocha*.

This *Vayu* also produces *Rukshatva* in *Pranavaha Srotas* leads further broncho-constriction which causes *Pratiloma gati* of *Pranavayu* resulted in *Shotha* in the *Pranavaha srotas*. *Ama* in the pathogenesis of *Tamaka shwasa* is very significant since *Ama* triggers the *Dosha* through its various properties; *Drava*, *Guru*, *Snigdha*, *Picchila Guna* of *Ama* vitiates *Pitta Kapha* and *Rasadi Dhatus* and these factors trigger obstruction of *Pranavaha Srotas* through vitiated *Vata* so symptoms are severe pain dried mouth, suffers frequently from paroxysms of dyspnoea which aggravated by clouds, water, cold and *Kapha* increasing things.



Flow chart-5 Pathogenesis of *Tamak Swash*:

Treatment of *Ama*: *Langhanm*, Use of *Ushnodak*, *Swedana*, *Pranayaam-Bhastrika*, *Kapalbhati* etc. *Yoga* -

Mandukasana, *Utkatasana*, *Mayurasana*, *Vijrasana* etc. Some herbal drugs: Fresh

ginger, Garlic, Black Pepper, Castor Oil, Coriander, Guduchi, Shunti etc.

Concept of *Ama* and Free Radical Theory:

[13] There are some views suggesting that free radicals are pathologically correlated with *Ama*. Free radicals are atoms, ions, or molecules that contain an unpaired electron. Thus, they become electrically charged because the number of negatively charged electrons does not match with positively charged protons. Free radicals are unstable chemicals formed in the body during normal metabolism and can cause degenerative changes and other diseases like cancer, Myocardial infarction, etc.

Similarities Between *Ama* and Free Radicals:

[14] A free radical is an atom/molecule that contains one or more unpaired electrons, which requires neutralization by free radical scavengers. Thus, it exists in an incomplete metabolic state which is also the state of *Ama* described as *Avipakvam* (incompletely digested/metabolized). Next, it is seen that when produced, free radicals are assimilable to body products, and free radicals are assimilable to body components and exist in a free state. Similar is the case with *Ama* when it is produced it remains in an inassimilable state and hence termed *Asamyuktam*. Free radicals cause damage to the cell membrane and thus the cell is destroyed. This destruction may lead

to putrefaction and foul smell generation, which is similar to one of the properties of *Ama* described as *Durgandham*. Though *Ama* remains in the body as *Asamyuktam*, due to its properties like *Bahupicchilam*, etc. it sticks to normal healthy body tissues very quickly, similar is the case with free radicals.

Similarities in the production of disease:

***Ama*-**

Nidana sevena > *Jathragni hypo- functioning* > *Dhatvagni Daurbalya* > *Sanchaya of Ama* > *Prasara of Ama* > *Sthanasamsrya* > Site of *Khavaigunya* > Production of Disease

Free Radical -Impaired action of F. R. Scavengers > At Increased production of F. R. site of production at this site > Circulation of F. R. > At the Starts reaction to > The weak cell membranes > Production of disease

DISCUSSION: The concept of *Ama* is the most important fundamental principle of Ayurveda in understanding the physiopathology of diseases. It is cleared from above citation that *Ama* is the resultant of the hypofunctioning of *Jatharagni* as well as *Dhatvagni*. There are mainly three level of *Ama*, *Ama annarasa* (untransformed food material) at the gastrointestinal level, *Malasanchaya* (collection of metabolic waste) and *Prathma Doshadusti* (sudden vitiation of *Dosha* due to extrinsic factor). That material Posses the property of *Visha* or toxin substance,

accumulates in the body. Different treatment principles are advised for *Sama* and *Nirama* condition. In *Samaavastha - Apatrapan* is the main treatment whereas in *Niramawastha - Samtarpana* is the mode of treatment.

CONCLUSION - Ayurveda attributes cause of any disease to an imbalance in one or all of the *Dosha* and for successful treatment of a particular disease *Vaidya* has to determine, whether the imbalanced *Dosh* is *Sama* or *Nirama*. After studying *Ama* it becomes clear that *Ama* is not a single entity but is a generalized term that can be applied to many malformed substances in the body. This *Ama* is responsible for the production of various diseases. *Ama* is a condition that occurs when the immune system mistakenly attacks its own constituent parts as self and destroys its own cells and tissues lead to acute pain and swelling. *Ama* is the basic causative factor for the development of many diseases. *Ama* is fairly easy to clear from the body, but once it spreads into the deeper tissue it becomes much more difficult to eliminate. As *Ama* accumulates in the body, it inevitably clogs the channels of the body and disrupts tissue nutrition. This can cause much serious diseases.

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