A LITERAL REVIEW ON THE ESTABLISHMENT OF 'AMA ASSESSMENT CRITERIA' AS A GREAT DIAGNOSTIC TOOL IN VARIOUS DISEASES

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ABSTRACT

Ama is a peculiar concept in Ayurveda. Ama is considered as an undigested or partially digested or partially metabolized substance which requires further transformation and if retained as such, it may produce obstruction in the micro and macro channels of the body, which ultimately creates the condition of srotovaigunya. Nearly all diseases as per the Ayurvedic view have their origin from ama dosha. Therefore it is very important to evaluate ama dosha for every Ayurvedic physician who wants to be a good clinician. Ama dosha can be evaluated by the help of a questionnaire which is prepared on the basis of general symptoms of ama dosha.

Keywords: Ama dosha, evaluate, general symptoms, srotovaigunya, questionnaire

INTRODUCTION

According to ayurvediya principles, ahara and jatharagni are the most important for all the biological activities or a living body. Living body is an end result of food while diseases are end results of unwholesome diet.1

All diseases are due to hypo functioning of agni.2 Agni is a coin; health and diseases being its two sides. Jatharagni nourishes the body tissues etc. through ahara- rasa. If this is one side of the coin, then what is the other side? If on one side ahara-rasa plays a role in the maintenance of health then what factor on the other side plays a role in the pathogenesis of the diseases. What is the hidden link between agni and the diseases? It is here only that the crucial role ama plays unveils. Such is an integral role ama plays in the pathogenesis of diseases that disease in general sense is also known as ‘amaya’.3,4

It is quoted in Rigveda & Yajurveda that one who destroys rakshasa (krimi/microbes) and ama is known as bhishak (physician).

In ayurveda, ama is considered to be responsible for the production of all types of internal diseases. Even diseases caused by external agents are actually manifested only when there is production of ama and subsequent vitiation of agni which is present in that locality.
What is *Ama*?

The word *ama* indicates that which undergone slight *paka* (digestion).

*Ama* word has got mean of *ishat paka* (undergo slight *paka*), *asiddha* (not attained its final form), *paka rahit* (not at all undergoing *paka*), *apakvam* (partially cooked), *vyasththam* (improperly cooked). So; *ama* can be defined as a substance which is involved in the process of *paka* without attaining its final form.

1. *Ama* has been defined as a condition in which the first *dhatu* namely *rasa* is not properly formed due to the lowered strength of *agni*.  
2. According to some authorities as quoted by *vagbhata*, the impaired *vatadi doshas* become mixed up with one another leading to the formation of *ama dosha* very much like the production of the toxin from the spoiled *kodrava*.
3. The undigested food resulted from various causes of *mandagni* attain fermentation (*shuktatva*) leading to the set of toxic states called *ama visha*.
4. *Sushruta* opines that wound until it gets *paripakva* state is called *ama* condition temporarily.
5. *Vijayarakshita* has cited a number of definitions and descriptions of *ama* obviously quoting various contemporaries as follows:
   a. The food which is not properly digested and is stagnated, then the outcome of such digestion is known as *ama*.
   b. The *ama-rasa* which is not properly formed in the *amashaya* due to the impairment of *kayagni* is known as *ama*.
   c. The undigested *ama-rasa* possessing foul odour and is highly viscous deprives the body of its nutrition and in consequence causes *sadana* (fatigue) etc. is known as *ama*.
   d. Imperfectly digested intestinal contents are known as *ama* i.e. if *anna rasa* is not properly digested and formed then the outcome of such a digestion is known as *ama*.
   e. Due to impaired *jatharagni*, residual of *ahara-rasa* is still left behind undigested towards the end of digestion (*rasasheshi*); it is then known as *ama*, which is the root cause of all the diseases.
   f. The food which is not properly digested is *ama*.
   g. The accumulation of *mala* in body is known as *ama*.
   h. The stage of first *dosha-dushti* is *ama*.

*Ama-dosha* settles in which particular part of the body, there influenced by *vatadi dosha* produce disease represented by various symptoms of *vatadi dosha* and syndromes by *ama* like *apakva, alasaka, amavata* etc. On analysis of all the definitions coined by the various authors, it can be said that *ama* is a stage/condition of a substance resulted in the process of *paka* on subjecting to the *agni* before attaining its final transformation.

Final transformation; in the sense, the ingested material to be transformed either to yield energy in the body (for *dhatu-vyapara*) or for the synthesis of new tissues (for *dhatu-nirmana*) and final elimination as end products. Once the substance attains the target state it is not called as *ama*. Simply it can be said that-*ama* is the precursor state of a substance in transformation. *Ama* condition can be formed at any level of *agni san-nikarsha* due to its hypo functioning, may be at *jatharagni, dhatvagni and bhutagni*. 
After going through all the definitions above three words emerge ama, ama-dosha and ama-visha. Though all the three convey same meaning, these words are coined for different states of apakva dravya. The apakva ahara rasa which is situated in amashaya gets shuktatva after passage of some time. That shukta bhava of apakva ahara rasa is called ama. During further course of the time, ama interacts with dosha and become pathogenic which is known as ama dosha.  

The ama dosha on further stasis gets more shuktatva thereby attains and acquires visha qualities. This toxic condition is known as ama-visha. In the mode of causing disorders, clinical features and principles of treatment are also distinctly different for each condition. Hence ama, ama dosha and ama-visha terms are distinct, indicating the actual state of ama.

Swaroopa of Ama

Though ama may originate at various levels in different structures, it possesses certain inherent qualities-


The colour of ama as described by vagabhata, aneka varna may be due to the substances under process and the tissue involved.

Ama guna described above may be seen not only at gastro intestinal level but also at tissue level and in yielding energy (catabolism) and in synthesis (anabolism). All vijatiya dravya (exogenous substances) must undergo paka (transformation) and become sajatiya (endogenous) either to yield energy or to synthesize tissues. In such a process, any substance gets stasis at any stage in any form is called ama.

Thus an undigested food particle, bacteria, virus, intermediary metabolic end products, accumulated substances in metabolic rearrangements and synthesis, free radicals, foreign substances (antigens) come under the panorama of ama.

Formation of Ama at different levels

Ama formation takes place broadly at three levels namely jatharagni, bhautagni and dhatvagni level due to their hypo functional state. There are multiple factors in the production of ama yet the compulsory inevitable intermediary factor is mandagni.

Hence, ama may form at all the tryodashagni levels.
It is seen that dalhana and chakra-pani; in their commentaries on shushruta sutra 15/35 have stated that the formation of ama need not necessarily be due to jatharagnimandya only. It may also occur due to impairment of dhatvagni vyapara. It is also seen from ‘atankadarpana’ commentary of madhava nidana that ama dosha may be caused due to dhatvagni and bhutagni on account of which shosha, vrana, vidradhi and such other diseases may be caused.20

At jatharagni level

Ama appears to be identified at eight levels in ahara parinama due to jatharagnimandya.21
1. Apakva ahara in amashaya.
2. Apakva ahara rasa in amashaya.
3. Rasasheshi in amashaya.
4. Ahara rasa + dosha.
5. Apakva mala in annavaha srotas.
6. Addhya dhatu resulting out of apakva ahara rasa.
7. Circulating apakva rasa dhatu.
8. Transformation of the apakva rasa dhatu to uttarottara dhatu.

At bhutagni level

The ama rasa which has not crossed intestinal villi is known as sthula ama rasa while ama rasa which crosses them and enter the circulation is known as suksma ama-rasa. This attains the micro molecular size but not attain the ultimate size physiologically. This; when subjected to bhutagni, brings down the acuteness of bhutagni due to its gurvadi gunah. In this state vijatiya ahara rasa will not be able to turn as sajatiya due to bhutagni mandya; and hence rejected by body tissues. This acts as antigen. These suksma ama-rasa molecules like foreign proteins i.e. undigested proteins, bacteria etc. which enter through the GIT into the circulation and behave like antigens. This antigen in the circulation is pathogenic which can be called as suksma ama rasa. This circulating suksma ama rasa vitiates vatadi dosha by its guru, abhisyandi etc. gunah and manifests various diseases according to the existing srotovaigunaya.22

So any substance which remain stable without any paka or remain in as residual or as a by product without attaining its finality in the metabolism can be called as ama such as pyruvic acid, lactic acid, ketones etc. Diseases like madhumeha, udara, vatarakta, raktapitta, kshaya, amavata and several other disorders are due to hypo function of bhutagni.

Radical is a group of atoms which enters and goes out of the chemical combination without undergoing any change in the configuration. This definition obviously denotes radical is an ama particle in circulation (at bhutagni level). When this particle allows a reaction with molecular O2 it becomes peroxide radical i.e. vidagadhakara paramanu known as free radical, which acts at random by hydrogen obstruction and a variety of additional reactions to damage protein, other lipids and vitamins particularly vitamin A. These ama particles are resultant of bhutagnimandyata. Since these particles; do not change its configuration thereby not accepted by any dhatu in the process of metabolism.

At dhatvagni level

When circulating ahararasa is in ama condition (suksma-ama), the tissues in body are not able to utilize it. Since, it is heave to respective dhatvagni whereby leading to dhatvagnimandya and subsequent ama state in that dhatu.
Since, dhatvagnimandyata is prevailing; synthesis of new tissues is not possible. Incompletely or partially metabolized substance will become toxic leading to condition called as metabolic cyto-toxic anoxia, which is similar to that of ama-visha.

If enzymatic action is poor, the production will be more of mala bhaga than of sara bhaga. Hence, production of dhatu-mala increases causing more mala-sanga thereby manifestation of diseases.

During Krebs cycle, carbohydrates, proteins and fats end in pyruvic acid, acetic acid and ketoacid respectively. In case these substances are produced more and get accumulated in the tissues resulting in various pathological disorders, similar to that of ama. Since each dhatu has got its own structure and specificity because of its own agni, hence due to hypo function of them there is possibility of ama production at each dhatu level. This ama causes pathogenicity at each dhatu level according to its agnimandya. On going into detail there are several disorders due to dhatvagnimandyata which are to be classified as sama roga and treated as ama-janitaroga. All hormonal, enzymatic deficiencies are to be ama-janitaroga at respective dhatvagni due to its hypo functioning.

The hormones like ACTH, Thyroxine and other anabolic steroids are also to be considered as kayagni-ansha, which trigger pachakagni-ansha located in dhatu, though its effect is not linked directly to any specific dhatu. In such conditions, any hypo functioning of these hormones leads to the production of ama in its target tissues in the body.

**Sama and nirama conditions**

Assessment of sama and nirama condition is the most important factor from the diagnosis and treatment point of view. For example if sama condition is existing, before instituting shodhana and shamana therapy langhana, pachana, and dipana are advocated, whereas, in nirama conditions we can proceed straightway with shodhana and shamana therapy.

**Srotodushti**

Khavaigunaya is an important factor in the establishment of sama roga. Out of four verities of srotovaigunaya, srotosanga is the commonest factor in the manifestation of sama roga. Srotosanga is of 3 varieties.

1. Obstruction of channels (srotasa) by antigens or by thromboembolic phenomenon mostly due to guru, tanu, avipakva, asanyukta guna.

2. (a) Due to inhibition of impulses by vitiated vata, suddenly there will not be any movement in the tissues resulting in the arrest in the movement of cilia, villi etc and final movement of musculature leading to blockage or srotosanga.

   (b) Vitiated vata can also cause srotosankocha (spasm of the vessel walls) leading to sudden closure of channels i.e. srotosanga.

3. Srotosanga due to pressure from extra vascular conditions.

   Whenever ama condition exists, mala vriddhi takes place due to mandagni. This mala vriddhi cause srotoavarodha thereby sama roga. So it can be concluded that srotosanga in sama roga is due to Ama & Mala vriddhi.

**Dosha dushti**

Wherever ama is present; it triggers the dosha through its various properties. Drava, guru, snigdha, pichchila guna of
ama increase their moieties in the pitta, kapha and rasadi dhatus. Whereas, avipakava, asanyukta guna cause mala-mutra vriddhi. Hence they lose their natural properties and get vitiated. So, all these factors which are in chayavastha cause obstruction of the channels and subsequently vitiation of vata.

Apart from the above tantumaya, abhishyanda, avipakva and asanyukta guna cause srotavarodha (obstruction of channels) whereby disturbance of vatanulomana results in udavarta and vataprapokpaka conditions. Vata moves the accumulated dosha, dhatu and mala into the circulation the body and settles according to srotodushti (i.e. sthanasansraya) basing on the factors involved in the etiology and pathogenesis. Hence, sama roga or involvement of ama are vivid and in wide range consisting of 80% of the diseases.

**Clinical features of sama conditions**

Sama condition is nothing but the stage of sthanasansraya in shatakriyakala whereas sama roga is a vyaktavastha.

In sama-roga specific features of the diseases appear according to the doshadashta involvement and in sama conditions some common features will be present which are present in all sama-roga irrespective of their specific dosha-dushya involvement.

Clinical features mentioned in sama conditions indicate only samavastha irrespective of whether the condition passes to the next stage of sama-roga or not. Sometimes, these features may disappear with treatment without passing to the next stage. Hence these signs and symptoms are most important in indicating the pathogenic state as well as to guide the physician.

Features are described by vagbhata as

1. Srotorodha 2. Balabhransha
3. Gaurava 4. Anilamudhata
5. Alasya 6. Apakti
7. Nisthivana 8. Mala sanga

Various symptoms produced due to presence of ama in body, are described in texts. These symptoms help in diagnosis of ama clinically. Sama and nirama stage of disease can also be identified with presence or absence of these symptoms.

On the basis of these symptoms a special questionnaire format was prepared to evaluate the level of Ama-

1. I often feel a sense of blockage in my body (constipated, congested in the head, sinus congestion and general lack of clarity or other). 0,1,2,3,4
2. In the morning when I wake up, I’m groggy; it takes me quite a while to feel really awake even after a good night sleep.0,1,2,3,4
3. I tend to feel weak physically, for no reason that I can see.0,1,2,3,4
4. I get colds (or similar conditions) several times each year.0,1,2,3,4
5. My body trends to have a feeling of heaviness.0,1,2,3,4
6. I just tend to feel that “something isn’t working right” in the body (digestion, breathing, bowel movements or something else).0,1,2,3,4
7. I tend to feel lazy and unenthusiastic (My capacity to work seems all right but I have no inclination).0,1,2,3,4
8. I yawn after a main meal and just want to curl up and snooze.0,1,2,3,4
9. I commonly have indigestion.0,1,2,3,4
10. I often have to spit or need to cough regularly. 0,1,2,3,4
11. I have a general sense of malaise with vague aches and pains. 0,1,2,3,4
12. I experience abdominal bloating and gas especially after a main meal 0,1,2,3,4
13. Often, I just don’t have a taste for food. I have no appetite or hunger. 0,1,2,3,4
14. I feel tired and lethargic even exhausted all day long, even though I eat well and sleep well. 0,1,2,3,4
15. I feel lack of mental clarity, energy and general lack of motivation or zest for life 0, 1,2,3,4

♣ Add up your scores to arrive at a rating for your level of Ama-

| Absent | 0 |
| Mild | 01-15 |
| Moderate | 16-30 |
| Severe | 31-45 |
| Agonizing | 46-60 |

CONCLUSION

According to Acharya Vagbhata derailment of Agni is seen in almost all the diseases. Ama is an important factor in the initiation of disease. Dohsas, dhatus and malas are the basic components of the body. When these components of body remain in equilibrium healthy state of body is maintained. When these doshas, dushyas or malas come in contact of ama they produce diseases. Status of Ama of a person is itself an indicator of good or bad health and it is the main cause in the manifestation of the disease. On the basis of general symptoms of sama dosha as described by the Acharya Vagbhata a questionnaire was prepared. So; by the help of this ‘Ama assessment criteria’ one can assess the extent of involvement of ama dosha in various diseases. Every physician should consider Ama as an important pathogenic factor during deciding management.

REFERENCES


15. Agnivesha: Charaka Samhita, elaborated by Charaka & Dridhabala with the Ayurvedadipika Commentary by


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