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## AMA; AS ANTIGEN TOWARDS THE DISEASE PATHOGENESIS W.S.R. TO AUTOIMMUNE DISORDERS

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### ABSTRACT

The Ayurveda system of medicine elaborated various concepts related to the diseases and their management, *Ama* is one of such concept described by ancient Ayurveda practitioner. *Ama* can be described as toxins or antigen which can precipitate or trigger pathogenesis of many diseases including auto-immune disorders. The unripe or undigested food materials are main sources of *Ama* thus hypo-functioning of *Agni* can be considered as causative factors of *Ama* production. The *Ama* can initiate pathogenesis of diseases such as; *Amajeerna*, *Atisara*, *VidagdhaJeerna*, *Vistabdhajeerna*, *Grahani Dosha*, *Amavata* and *Jwara* etc. Ayurveda science mentioned that suppression of *Ama* offers relief in many diseases thus it is very essential to understand biochemical and physiological events related to *Ama*, considering this aspect present article emphasizes concept of *Ama* and its role as antigen (toxin) towards the pathogenesis of diseases.

### KEYWORDS

Ayurveda, *Ama*, Auto-Immune, Antigen and Toxin.

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### INTRODUCTION

The concept of *Ama* is one of the unique aspects of Ayurveda principles and it is believed that prevalence of many diseases occurs due to the accumulation of *Ama* inside the body. According to Ayurveda the factors such as; over eating, irregular dietary habit, bad conduction of *Ritucharya* and *Dincharya*, allergic states, suppression of natural urges and stress etc. are the causative factors of *Agnimandya* and *Mala Sanchaya* which can facilitate *Amotpatti*. The process involve in the formation of *Ama* depicted in Figure No.1. This *Ama* further

aggravates *Tridosha*, disturbs nutritional supply, diminishes *Dhatus*, blocks channels and disturbs physiological functioning of body. It is also believe that when vitiated *Doshas* mixed with other factors then *Ama Dosh*a produces as like *Visha*. The major characteristics of *Ama* are that it is undigested *Annarasa* having unpleasant odour and deprives from the nutritional components of *Ahara* therefore acts as a toxic material<sup>1-5</sup>.

### Three Types of *Amaawastha*

There are three types of *Amaawastha*; the descriptions of these different types of *Ama* are as follows:

1. The heavy and sticky *Ama* formed due to the low *Jatharagni*, *Bhutaagni* and *Dhatwagni*, this *Ama* accumulate in the channels of the body.
2. The *Ama* which is more toxic termed as *Amavisha* which can induces chronic diseases after mixing with *Doshas*.
3. The third type of *Ama* termed as *Garvisha* which is mainly associated with environmental toxins bioaccumulation.

### General signs and symptoms of *Ama*; toxin (antigen) to the body

- Fatigue, lethargy, feeling of heaviness or sluggish.
- Formation of gas in stomach, constipation or diarrhea.
- Bloating, lack of taste and odour.
- Bad smelling mouth, lack of enthusiasm and loss of appetite.
- Dull pulse, anxiety and lack of immunity.

### General role of *Ama* in diseases

*Ama* posses slippery, heavy and sticky character, it produces clogging and obstruct *Srotas* of body when get absorbed through the gut. The blockage of channels may result condition like; *Alasaka* and *Visuchika*. The *Amaja Vyadhi* mainly associated with *Agnimandhya* and lack of neurohumoral functioning. The *Amajeerna*, *Kaphaja* predominance can produces disease like *Visuchika*, similarly *Vidagdha jeerna* which is *Pittaja* predominance can produces disease like *Vilambika* while *Vistabdha jeerna* which is *Vataj* mainly responsible for *Alasaka*. Ayurveda mentioned that acute

conditions like; *Pravahika*, *Jwara* and *Atisara* etc. are also occurs due to the excessive production of *Ama*. Regarding chronic condition it can be stated that *Ama* cumulatively acts like *Gara Visha* and induces chronic ailments. Similarly diseases like; *Yakritodara*, *Grahani Dosh*a, *Shotha*, *Prameha*, *Amavata* and *Pandu*, etc. can be triggered by the adverse effects of *Ama*. *Ama* acts like antigen inside the body and stimulate body response towards the antigen which ultimately turned to pathological events and diseases<sup>3-6</sup>.

### Autoimmune diseases and *Ama*

Autoimmune diseases occur when self-immune system attacks on body's cells as a response against the harmful metabolites like; *Ama*. The *Ama* affects physiological functioning in autoimmune diseases not only to the tissue level but also cellular and molecular level. The inflammatory or allergic reactions associated with autoimmune response can also triggered by *Ama*<sup>4-8</sup>.

- The penetration of *Ama* into deep tissues affects cellular activities and triggers autoimmune responses.
- When *Ama* gets associated with vitiated *Dosha* then it suppress functioning of *Dhatu* and altered autoimmune may observed inside the body.
- The accumulation of toxins (*Ama*) damage vital organs thus defense mechanism paralyzes.
- The *Ama* obstruction can alter signaling pathways which further enhances incompatibility of cellular response towards the self-body system leading to the autoimmune disorders.
- *Ama* blocks signals communicate through the cells, thus prevent signaling pathways required for normal physiological functioning of body.
- It suppresses process of metabolism thus enhances more production of *Ama*.

The antigen like behavior of *Ama* which initiate disease pathogenesis first involve aggravation of causative factors (*Hetu*) of *Mandagni* and *Apachit Aahar* leading to the production of *Ama*, *Ama Dosh*a and *Srotas Avarodh*. The disease *Visuchika* can

occur as *Vyadhi* of *Mahastrotas* associated with adverse effects of *Ama anana*. Similarly disease like; *Amavata* can occurs as *Sarvadehic vyadhi* when adverse effects of *Ama Rasa* are predominant. The Figure No.2 depicted role of *Ama* as antigen towards the autoimmune disorder; *Amavata*

The diseases such as; agammaglobulinemia, ankylosing spondylitis, auto-immune hepatitis, berger's disease, crohn's disease, cushing's syndrome, psoriasis, rheumatoid arthritis, systemische lupus erythematodes and ulcerative colitis etc. can occurs as an autoimmune response against the antigen like *Ama*<sup>7-9</sup>.

#### Relieving *Ama*

- The first step involves consideration of concept of *Nidan Parivarjanan* involving avoidance of causes which can induces pathogenesis of *Ama*.
- One should avoid overeating and eat only when previous meal gets digested.
- One should avoid consumption of overcooked, hot and sour foods.

- Spicy, heavy, oily and junk food need to avoid.
- Emotional upset, stress and anxiety can also produces *Ama* thus one need to avoid such types of events.
- When *Agni* is low then heavy meal should not be consumed.
- The use of *Ama Pachan* substances can also help to reduces effects of *Ama*.
- Spices like black pepper and ginger can be used depending upon the *Prakriti* of person.
- *Agni Dipana* herbs; *Cumin*, *Turmeric*, *Cardamom* and *Cinnamon*, etc. can be used for the management of *Ama*.
- *Shodhan* therapy like *Panchakarma* help to detoxify toxins thus cleans body and help to reduces excessive *Ama*.
- *Swedana* therapy helps to soak *Ama* from cells and tissues.
- *Snehana* helps to loosen and scatter clump of *Ama Dosha* thus facilitate their detoxification.

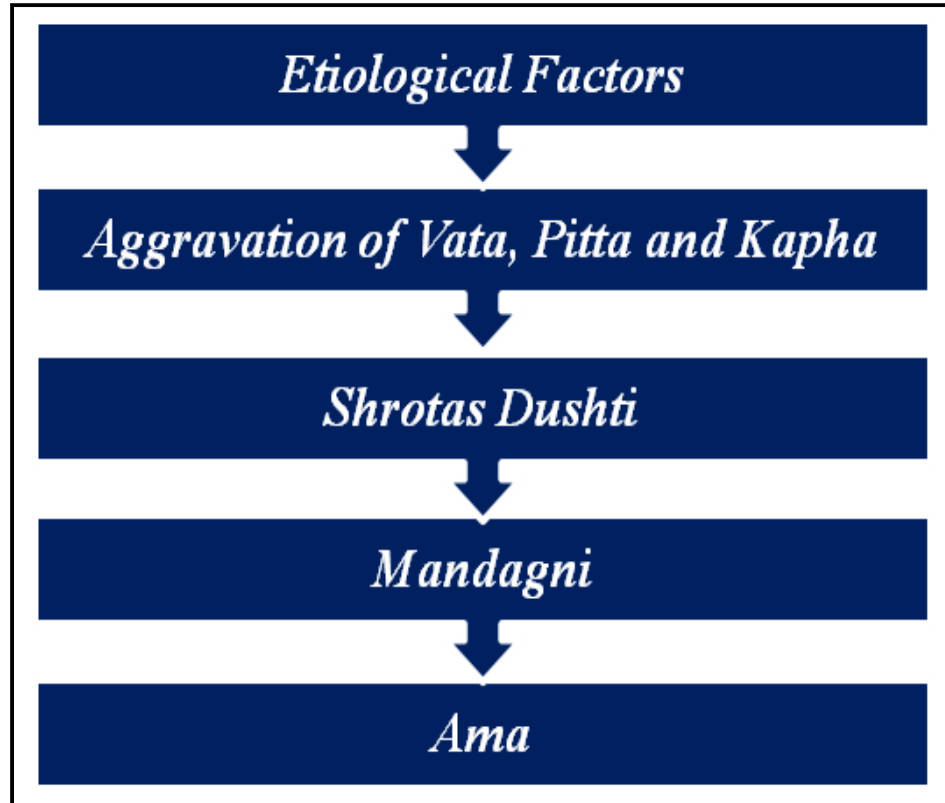


Figure No.1: Production of *Ama*



Figure No.2: Role of *Ama* as antigen towards the autoimmune disorder; *Amavata*

## CONCLUSION

The *Ama* formation occurs at *Jatharagni* or *Dhatvagni* level thus nourishment of body get affected leading to the pathological conditions. The altered functioning of *Dhatvagni* and *Bhutagni* leads impairment of cellular metabolism. Thus *Ama* affects digestive and metabolic functioning at different levels of assimilation. The *Khavaigunya* of *Ama* during its accumulation in *Strotas* or *Dhatus* induces pathogenesis of various diseases. *Ama* affects nourishment of *Rakta*, *Mams*, *Asthi*, *Majja* and *Sukhra*. *Ama* causes inflammation where it get accumulated leading to the inflammatory autoimmune diseases. In this regards it is stated that own immune system mistakenly identify accumulated *Ama* as a foreign material and defense mechanism starts attacks on it resulting to the adverse autoimmune responses. The consideration of concept of *Virrudha Aahara*, avoidance of emotional factors (fear, anxiety and anger, etc.), avoidance of bad conduction of daily regimen and avoidance of sedentary life style, etc. helps to reduces adverse effects of *Ama*.

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## CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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