



## Case Study

# Case study of *Ama roga* with respect to hypersensitivity type I reaction

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### Abstract

Ayurveda is the veda recalled by Lord Brahma at the dawn of human existence for the betterment of human life in swarga loka and Prithvi Loka. It is therefore Anadi i.e. with no beginning nor ending, Sashwat I.e. eternal and with its own basic principles. The principle of Agni and Ama is one of them. Agni is considered as the prime factor in the maintenance of life whereas if same agni is in in equilibrium state the ingested food taken is not digested properly leading to formation of toxin particles that is known as Ama which can further prevent proper nurture of rasa raktadi dhatus. So, ama can be defined as a substance which is involved in the process of paka without attaining its final form being circulated via blood in body as foreign particle or free radicles and over a long period of time may get converted into amabisha. For which tissue consider as allergens and develops a reaction either to opsonize it or to eliminate that which reaction is known as hypersensitivity. The dysfunction arises out of that reaction is called allergic disorder. Hence all allergic disorders are to be considered as samarogas and the principles of samarogas chikitsa should be adapted to relieve and cure the condition. Therefore, a patient with known case of hypersensitivity type I allergy to milk, egg and shrimp was treated with same principle and had got satisfactory result.

**Keywords:** Ama, Agni, Allergens, Hypersensitivity

### Introduction

In Ayurveda, almost all diseases under Kaya chikitsa are manifested due to formation of Ama, which is in fact the result of imbalanced state of Agni. Ama has been defined as a condition in which the first dhatu namely Rasa is not properly formed due to lowered strength of Agni. In this state, the food

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ingested becomes dusta leading to the formation of Ama dosha, very much like the production of visha from the spoiled kodrava. The etiological factors of amadosha as described by Acharya Charaka can be ahara factors i.e. dietary factors such as indigestion, fasting, overeating, heavy, oily and spicy food, excessively dry, dehydrated food etc or can be bihara factors i.e. lifestyle disorder such as excessive stress, lack of sleep etc or can be due to incompatibility of country, climate or season. In either condition, the food consumed is not digested or absorbed properly resulting in formation of Ama. Such ama is thus neither converted into anna rasa nor into mala but in form of amarasa crosses the intestinal villi and enters into the circulation and is known as sukshma amarasa. The sukshma amarasa molecules have not attained its finality in the digestive process due to manda jatharagni and also because of its heaviness (gurutwa) again lowers bhutagni and thus is not able to turn as sajatiya due to bhutagni mandyata, hence rejected by body tissues. This results in so called allergic reaction of body to an exogenic foreign substance i.e. antigen. This antigen in circulation is pathogenic which can be called sukshma amarasa that vitiates vatadi dosha by its guru abhisyandi gunas and manifests diseases according to existing srotovaigunya. Hence, causing anaphylactic shock, allergic skin manifestation, etc.

In other hand allergic disorder can be defined as the clinical manifestation of inappropriate IgE immune response to normally harmless exogenous substance known as allergen. Such allergens triggers the production of specific IgE antibodies which bind to circulating mast cells via high affinity IgE receptor. On re-encounter, the allergens binds to IgE antibody coated mast cells which activates the mast cells releasing variety of vasoactive mediators. This type I hypersensitivity reaction forms the basis of allergic reaction which can be manifested as food allergy. As ama is defined as substance that has not attained finality and thus is not turned into endogenous during process of digestion

and metabolism is treated as foreign body and thus considered as allergens inducing hypersensitivity reaction to opsonize or eliminate from body. Therefore, all allergic disorders are to be considered as samarogas and the principles of samaroga chikitsa should be adopted to cure the condition.

### Case report

A 37-years-old female patient resident of America approached on 2023/01/09 with known case of type I hypersensitivity reaction to specific food viz egg white, milk and shrimp since 4 months. According to the patient, she was apparently well 4 months before and developed this condition all of sudden along with complaints of having rashes over nape of the neck which is reddish, erythematous lesion type radiating slowly all over trunk and back associated with itching and aggravated while intake of egg white, milk and shrimp. She had visited hospital nearby where she had been given steroids via injection and via orally, the names of steroids were not specified by the patient but those steroid did not relieve her condition.

As per past history, she has been suffering from chronic gastritis since a year and had taken tablet Pantoprazole for the condition. There is no history of diabetes, hypertension, malignancies or metabolic disorder. Also, no history of surgical intervention. There was no significant family history. The patient was non vegetarian, nonalcoholic and nonsmoker. Her appetite, sleep, bladder was normal while for bowel habit she was slightly constipated. She works in office and has been having lots of stress and work pressure. As per travel history 1 year ago she had visited Nepal to attend marriage ceremony for a month and due to environment change and also due to mismanagement of time she couldn't eat properly and since then she had suffered from gastritis which affected her for a long period of time and for that she had taken tablet Pantoprazole which relived her condition to some extent. Her menstrual cycle was regular. The

duration of bleeding was 4 to 5 days with cycle of 28+/- 4 days. Dysmenorrhea and clots were absent. The patient was married with obstetric history of P2A0L2D0.

shrimp 0.11 while the normal range for all of the above was less than 0.10.

On hematological investigation done on 2022/12/14 her hemoglobin was 13.1g/dl. Her Rbc/Wbc/platelets count were within normal limit. Her serum amylase was 108 u/l, serum lipase was 25 u/l. The allergen profile test showed foo1-IgE egg white 0.86, foo2-IgE milk 0.85 and fo24-IgE

### Treatment protocol

S.N.	List of medicines	Dose	Route	Anupan
1.	Chopchiniyadi churna-100g Kamdudha ras-10g Gandhak rasayan-10g	Mix 1 tsf twice a day before food	oral	Plain water
2.	Haridrakhanda granules	1 tsf twice a day after food	oral	Plain water
3.	Sarivadi vati	2 tab twice a day after food	oral	Plain water
4.	Flora sante	1 tab twice a day after food	oral	Plain water
5.	Triphala powder	1 tsf once a day before sleep	oral	Luke warm water

### Advice:

The patient was advised to avoid chilly, spicy, oily food and non veg diet along with jaggery, sesame, coffee, tea, fast food, processed food and junk food. She was suggested to take light meal on time and also sleep on time and to avoid stress as much as possible.

### Result

After intake of above medicines for 3 months the allergen profile test of the patient showed egg white and shrimp negative and F002-IgE milk 0.11 that is mildly positive. The report of case before treatment i.e. on 2022/08/25 and after treatment i.e. 2023/04/23 are respectively as below.

## Allergen Profile Food, 12 panel\*\*\* (602989)

NAME	VALUE	REFERENCE RANGE
<b>F</b> Class Description	<p>- Levels of Specific IgE Class Description of Class</p> <p>- -----</p> <p>-----</p> <p>- &lt; 0.10</p> <p>0 Negative</p> <p>- 0.10 - 0.31</p> <p>0/I Equivocal/Low</p> <p>- 0.32 - 0.55</p> <p>I Low</p> <p>- 0.56 - 1.40</p> <p>II Moderate</p> <p>- 1.41 - 3.90</p> <p>III High</p> <p>- 3.91 - 19.00</p> <p>IV Very High</p> <p>- 19.01 - 100.00</p> <p>V Very High</p> <p>- &gt;100.00</p> <p>VI Very High</p>	
<b>F</b> F001-IgE Egg White	<b>0.86</b> A	<b>Class II (kU/L)</b>
<b>F</b> F013-IgE Peanut	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F014-IgE Soybean	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F002-IgE Milk	<b>0.85</b> A	<b>Class II (kU/L)</b>
<b>F</b> F207-IgE Clam	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F024-IgE Shrimp	<b>0.11</b> A	<b>Class 0.1 (kU/L)</b>
<b>F</b> F256-IgE Walnut	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F003-IgE Codfish	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F338-IgE Scallop	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>

NAME	VALUE	REFERENCE RANGE
<b>F</b> F004-IgE Wheat	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F008-IgE Corn	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>
<b>F</b> F010-IgE Sesame Seed	<b>&lt;0.10</b>	<b>Class 0 (kU/L)</b>

PERFORMING LAB: Labcorp Birmingham, 1801 First Avenue South, Birmingham, Phone - 2055813500, Director - MD Rogland

PERFORMING LAB: Labcorp Burlington, 1447 York Court, Burlington, Phone - 8007624344, Director - MD Nagendra

Result: Abnormal      Accession ID: 23105944100

Notes: Your allergen test shows you have an allergy to egg white, milk & shrimp.

## Allergen Profile Food, 12 panel\*\*\* (602989)

	NAME	VALUE	REFERENCE RANGE
F	Class Description	- Levels of Specific IgE Class Description of Class - - - - < 0.10 0 Negative - 0.10 - 0.31 0/I Equivocal/Low - 0.32 - 0.55 I Low - 0.56 - 1.40 II Moderate - 1.41 - 3.90 III High - 3.91 - 19.00 IV Very High - 19.01 - 100.00 V Very High - >100.00 VI Very High	
F	F001-IgE Egg White	<0.10	Class 0 (kU/L)
F	F013-IgE Peanut	<0.10	Class 0 (kU/L)
F	F014-IgE Soybean	<0.10	Class 0 (kU/L)
F	F002-IgE Milk	0.11 A	Class 0/I (kU/L)
F	F207-IgE Clam	<0.10	Class 0 (kU/L)
F	F024-IgE Shrimp	<0.10	Class 0 (kU/L)
F	F256-IgE Walnut	<0.10	Class 0 (kU/L)
F	F003-IgE Codfish	<0.10	Class 0 (kU/L)
F	F338-IgE Scallop	<0.10	Class 0 (kU/L)

	NAME	VALUE	REFERENCE RANGE
F	F004-IgE Wheat	<0.10	Class 0 (kU/L)
F	F008-IgE Corn	<0.10	Class 0 (kU/L)
F	F010-IgE Sesame Seed	<0.10	Class 0 (kU/L)

PERFORMING LAB: Labcorp Burlington, 1447 York Court, Burlington, Phone - 8007624344, Director - MDNagendra

## Discussion

Treatment in ayurveda is based on samprapti bighattan i.e. disintegrating the pathology. In above case, the patient had history of chronic gastritis i.e. amlapitta due to which agni became mandhya leading to formation of ama which over a period of time became sanchit, prakupit and sthanasanchrita in khavaigunya area and thus neither could be digested nor absorbed but entered into the circulation due to which it is recognized as allergen by body resulting in hypersensitivity reaction.

Chopchiniyadi churna composed of chopchini(Smilax china), sarkara(sugar), pippli(Piper longum), pipplimul(Piper longum), marich(Piper nigrum), lawang(Syzygium aromaticum) akark-arabha(Anacyclus pyrethrum), gokshura(Tribulus terrestris),sunthi(Zingiber officinale), bidanga(Embelia ribes) and dalchini(Cinnamomum verum) is indicated in 5 types of upadamsha(chanchroid),vra-na, vataj roga and kustha. Kamdudha rasa composed of moti, prawal, kaudi, shankha, gairika and guduchi satwa is indicated in pittaroga and amlapitta. Giloya satwa(Tinospora cordifolium) has been shown to possess antioxidant, antihepatotoxic and immunomodulatory properties.

Haridrakhandha comprising of haridra(Curcums longa), cow's milk, sunthi, mari-cha, pippli,dalchini,ela(Elatteria cardamomum),tejpaat(Cinnamomum tamala),vidanga, nisoth(Operculina turpethum),triphala, nagke-shar(Messua ferra),nagarmoth(Cyperus scariosus) and loha bhasma is indicated for disease like itching, urticaria, and allergic disorders.

Sanjivani vati comprising of vayabidan-ga(Embelia ribes), sunthi(Zingiber officinale) pippli(Piper longum), triphala, vacha(Acorus calmus), guduchi(Tinospora cordifolium),suddha valla-taka(Semecarpus anacardium) and suddha vatsa-nav(Aconitum ferox) has deepan and pachan prop-erties and thus is indicated in ajirna and gulma.

Flora sante is a symbiotic containing ingre-dients that act as a probiotic helping in improving gut health. The use of probiotics in adults with milk hypersensitivity has been studied that certain strains may suppress the milk induced inflammato-

ry response and improve allergy symptoms.

Triphala churna acts as mild laxative and thus helping in getting rid of the ama via feces.

## Declaration of the patient content

The authors certify that the patient has given her consent for the clinical information and report to include in the article.

## Conclusion

From the above case study therefore it can be concluded that hypersensitivity reaction type 1 can be treated with respect to ama and can be re-lieved thereby improving quality of life. So, this kind of approach can be taken for treating further related cases.

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