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Review Article

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Ayurveda and Modern perspective on Food Poisoning and its Medical Management

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Abstract

Food poisoning, also known as food borne illness, arises from consuming tainted food, with infectious agents or their toxins contaminating the food at any stage of processing. Mishandling or improper cooking at home can also lead to contamination. Symptoms include vomiting, nausea, diarrhea, stomach discomfort and fever. In Ayurveda, the body's equilibrium is governed by three *Doshas*; *Vata*, *Pitta* and *Kapha*. Disproportion in any of these *Doshas* can result in ailments. *Aalsak* and *Visuchika* are Ayurvedic conditions akin to food poisoning, preventable through a balanced diet and lifestyle. Ayurveda also suggested some drugs such as; *Hinguvachaadi Choornam*, *Dashamoolarishtam*, *Hinguvachadi Gulika* and *Dhaanwantharam Kashaayam*, etc. to address condition of food poisoning. Present article discussed Ayurveda and modern perspective on food poisoning and its medical management.

Keywords: *Ayurveda, Food Poisoning, Viruddha, Ahara*

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1. Introduction

Food poisoning is brought about by the consumption of contaminated food and particularly rampant among children. According to the World Health Organization's estimation, food poisoning afflicts millions of individuals worldwide annually and children below the age of five years mainly suffered and lost their live if remain untreated. The gravity of this issue is further emphasized by the fact that India alone reports over ten million instances of food poisoning each year, leading to the loss of countless lives. Consequently, it is imperative to approach the predicament of food poisoning with utmost seriousness and address it accordingly.

Food poisoning, commonly caused by the ingestion of contaminated food, beverages, or fruits; it is an infection resulting from exposure to bacteria, viruses, germs, toxins and parasites. Its symptoms often encompass nausea, abdominal cramps, fatigue, discomfort, vomiting and mild fever, etc. Food poisoning can exacerbate into more serious complications such as dehydration and diarrhea, etc. (1-4)

2. Ayurveda View

The concept of *Viruddha Ahara* in Ayurveda denotes any food that disrupts the balance of the *Doshas* but

doesn't eliminate them from the body. Various forms of *Viruddha Ahara* as described in Ayurvedic literature can be categorized as follows: (4-7)

➤ *Desha Viruddha:*

Refers to the consumption of food with opposite properties to the local environment.

➤ *Kaala Viruddha:*

Involves consuming food with properties opposite in nature to the prevailing season.

➤ *Agni Viruddha:*

Relates to the consumption of food without considering an individual's specific digestive capacity.

➤ *Matra Viruddha:*

Signifies the consumption of food items that act as *Viruddha Ahara* when combined in inappropriate proportion.

➤ *Saatmya Viruddha:*

Concerns the consumption of food items that an individual is not accustomed to.

- **Dosha Viruddha:**
Involves the consumption of food items with some specific properties; leads to the vitiation of *Doshas*.
- **Sanskara Viruddha:**
Describes the consumption of food prepared using incorrect methods.
- **Veerya Viruddha:**
Refers to the consumption of food items with opposite potencies.
- **Krama Viruddha:**
Indicates the consumption of food items in the wrong sequence.
- **Koshtha Viruddha:**
Involves the consumption of food items without considering an individual's specific physiological constitution.
- **Awastha Viruddha:**
Refers to the consumption of food without considering an individual's health status and physical conditions.
- **Parihara Viruddha:**
Describes the consumption of cold food items after consuming hot and spicy foods.
- **Paak Viruddha:**
Refers to the consumption of improperly cooked food, including partially cooked or burned items.
- **Upachaara Viruddha:**
Involves consuming food items that are not supposed to be consumed after a particular treatment or activity.
- **Samyoga Viruddha:**
Refers to the consumption of food items that are not meant to be combined with each other, such as *Amla rasa* fruits with milk.
- **Hrut Viruddha:**
Involves the consumption of food items that are not pleasing or suitable for the consumer, such as bitter melon or decoctions for children.
- **Sampat Viruddha:**
Pertains to food items prepared using unhealthy ingredients, including foods cooked in vegetable oil or substances/fruits with altered or damaged taste.
- **Vidhi Viruddha:**
Describes the violation of dietary rules outlined in Ayurveda, which emphasize specific guidelines for food consumption under the *Aahara Vidhividhana* concept.

3. Examples of Types of Food Incompatibility

- ✓ Milk shake & fruit salads is example of food poisoning that involves *Rasa & Veerya Viruddha*
- ✓ Juice, Alcohol, Alcohol after hot spicy food comes under the heading of *Upachara Viruddha*.
- ✓ Cold water before hot tea arises under the category of *Koshtha & Agni Viruddha*.
- ✓ Spicy food with cold drinks is an example of *Awastha & Koshtha Viruddha*.
- ✓ Ice cream with hot chocolate is an example of *Guna, Agni and Samyoga Viruddha*. (6-8)

4. Ayurveda Advises for Preventing Food Poisoning

- ✚ Consumption of curd at night is discouraged due to its acidic nature, which can aggravate *Pitta* and *Kapha doshas*, leading to increased heat in the stomach and potential constipation.
- ✚ Immediate consumption of cold water during or after a meal, particularly hot tea or coffee, is cautioned against, as it can diminish the digestive fire and result in various digestive issues.
- ✚ Combining bananas with milk is discouraged due to its potential to diminish *Agni*, alter intestinal flora, and produce excess toxins in the body, possibly leading to cold, cough, and allergic reactions.
- ✚ Consumption of milk after green leafy vegetables or certain ingredients like radish, garlic, and basil is advised against to mitigate the risk of skin disorders, including leprosy.
- ✚ Simultaneous consumption of melons and grains is discouraged, as melons digest quickly while grains take longer, leading to potential stomach upset.
- ✚ Raw and cooked foods should be consumed separately, with a recommended gap between consuming salad and proceeding to the main meal.
- ✚ Equal quantities of honey and ghee, along with hot water after honey consumption, are considered antagonistic in nature.

5. Ayurvedic Approaches to Food Poisoning

According to Ayurveda, food poisoning is a result of an imbalance in the *Vata, Pitta* and *Kapha doshas*, often associated with the concept of *Virudh Ahara*. This imbalance can lead to disorders such as *Alasaka* and *Vishuchika*. Individuals with low digestive strength may experience vitiated *Vata dosha*, which, when combined with *Kapha dosha*, obstructs the movement of undigested food in the digestive tract. Disturbances in the digestive fire can consequently lead to imbalanced energies and subsequent ailments. Ayurveda suggested some approaches to combat food poisoning as depicted in **Figure 1**.

Panchakarma procedures in food poisoning involves approaches such as; *Vamana*, *Virechana* and *Nabhi Basti*.

Pathya Ahara Vihara in food poisoning involves uses of light and easily digestible food, warm food, green gram, buttermilk, sufficient rest, consumption of lukewarm water, avoidance of overeating maintenance of proper hygiene and conduction of dietary rules of Ayurveda.

Shamana Chikitsa is associated with utilization of drugs or herbs for treating condition of food poisoning some of them are as follows:

➤ *Kutaja*

➤ *Haritaki*

➤ *Adraka*

➤ *Peppermint*

➤ *Amla*

➤ *Bilwa*

➤ *Cumin*

➤ *Tulsi*

➤ *Ginger*

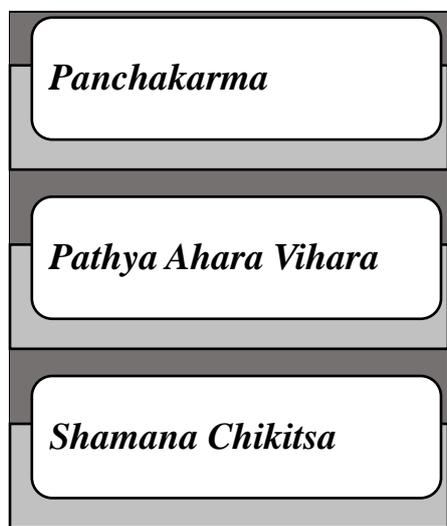


Figure 1. Ayurveda Approaches for Food Poisoning

Ginger contains anti-inflammatory properties that soothe the stomach lining and alleviate symptoms like vomiting, stomach ache, and nausea. Yogurt with its antibacterial properties can combat the microorganisms responsible for food poisoning. Garlic offers potent antiviral, antibacterial and antifungal properties not only avert fever but also alleviate symptoms such as diarrhea and stomach ache. Other Ayurveda drugs such as *Haritaki*, *Amla*, *Bilwa* and *Cumin*, etc. also provides relief in conditions associated with food poisoning. (6-8)

6. Modern Concept

The food poisoning can potentially trigger molecular-level inflammation and as per modern theory inappropriate food combinations may have adverse effects on the immune system, growth hormone, cellular metabolism and significantly affects normal physiology of body organs. A burgeoning discipline known as topography, focused on the combination of food, emphasizes that certain basic categories of food, particularly proteins, should not be combined with starch and carbohydrates and are better consumed separately. The rationale behind this recommendation lies in the fact that the digestion of starches requires an alkali medium, with the enzyme ptyalin in saliva breaking down starch into simpler forms. However, consuming proteins and starches together can result in delayed absorption of nutrients.

Furthermore, the ingestion of sugars and acidic fruits can impede the action of digestive enzymes, leading to

reduced secretion of saliva and delayed digestion. Fats can also hinder the secretion of digestive juices, thus reducing the efficacy of the digestive process. Consequently, it is advised to avoid or use fats sparingly with protein-rich foods. The repercussions of such incompatible food combinations may appear relatively insignificant in the short term, but over time, they can lead to grave health issues with potentially fatal consequences. (9,10)

Causes:

- ✓ Bacterial, viral or parasite infection
- ✓ Weak immune system
- ✓ Unhygienic cooking or baking practices
- ✓ Consumption of undercooked food
- ✓ Excessive consumption of food or consumption of food before the digestion of previously ingested food.
- ✓ Consumption of food in appropriate time/*Kala* or late night
- ✓ Improper way of taking food
- ✓ Wrong combination of foods or cooking items.

7. Organisms involves in food poisoning

Campylobacter bacteria found in poorly processed foods and drinks, *Escherichia coli* found in raw vegetables and undercooked meats, *Norovirus* found in

undercooked shellfish, *Listeria* present in deli meats and soft cheese, *Staphylococcus aureus* found in dairy products and canned foods, etc. are major microbes responsible for food poisoning. *Salmonella* found in undercooked poultry and raw eggs also causes food poisoning. (9,10)

8. Conclusion

Food poisoning arises from the consumption of contaminated food, wherein infectious agents or their toxins infiltrate the food during any phase of production. Inadequate handling or improper cooking practices at home can also lead to contamination. Common symptoms include nausea, diarrhea, vomiting, fever and stomach discomfort, etc. Ayurveda recommends specific remedies, dietary guideline and purification measure to relieve symptoms of food poisoning. In modern science, it is understood as an illness resulting from the consumption of food contaminated with harmful bacteria, parasites and viruses, etc. Common pathogens responsible for food poisoning include *Salmonella*, *Escherichia coli*, *Campylobacter* and *Listeria*. In severe cases, food poisoning can lead to dehydration, organ damage, and even death, particularly in vulnerable populations such as young children, the elderly, and individuals with weakened immune systems. Preventive measures in modern science focus on proper food handling, storage, and cooking to prevent contamination and the growth of harmful microorganisms.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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