

# Ayurvedic Principles in Allergy Understanding: The Role of Genetics, Incompatibility and Latent Toxins

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**Abstract**—Allergies are hypersensitive immune responses to substances that are generally harmless to most individuals, known as allergens. These reactions can range from mild symptoms such as sneezing and rashes to severe, life-threatening conditions like anaphylaxis. Common allergens include pollen, dust mites, animal dander, certain foods, insect stings, and medications. The prevalence of allergic diseases has been rising globally, influenced by genetic, environmental, and lifestyle factors. In Ayurveda, allergies are understood as imbalances in the body's doshas—Vata, Pitta, and Kapha—which disrupt the natural harmony and immunity (ojas) of the individual. Rather than viewing allergens as external threats alone, Ayurveda emphasizes the internal susceptibility of the body due to weak digestion (agni), accumulation of toxins (ama), and imbalanced doshas. Allergic reactions are classified based on their doshic predominance, with symptoms manifesting differently according to whether Vata (dryness, sneezing), Pitta (inflammation, rashes), or Kapha (congestion, mucus) is aggravated. Treatment focuses on holistic detoxification (shodhana), strengthening of digestion, personalized herbal remedies, dietary adjustments, and lifestyle practices such as yoga and pranayama to restore balance and enhance immunity. This paper explores the Ayurvedic understanding, diagnosis, and management of allergies, offering a complementary approach to modern medicine that addresses both the root causes and symptomatic relief.

**Index Terms**— Hypersensitivity, Asathmya, Viruddha Ahara, Dushivisha.

## I. INTRODUCTION

Hypersensitivity is defined as an exaggerated or inappropriate state of normal immune response with onset of adverse effects on the body. The lesions of hypersensitivity are a form of antigen antibody reaction. These lesions are termed as hypersensitivity

reactions or immunologic tissue injury<sup>1</sup>. Allergy produces certain symptoms temporarily which gets reduced by itself.

Prevalence - Allergic diseases are a common and increasing cause of illness, affecting between 15% to 20% of the population in India. An estimated 300 million people worldwide have asthma, with 37.9 million in India, equal to 55% of the total UK Population. The phase 3 International Study of Asthma and Allergy in children (ISAAC) reported an overall prevalence of current wheeze of 7% in Indian children aged 6-7 years and aged 13-14 years with a higher prevalence of up to 10-20% in some areas. The ISAAC study reported 2-7% overall prevalence of current eczema among Indian children aged 6-7 years and 3-6% among Indian children aged 13-14 years, In contrast to the high prevalence of rhinitis, asthma and eczema, food allergy was low at 0-14% among Indian children aged 6-11 years<sup>2</sup>.

According to Ayurveda, an imbalance in the three Doshas—Vata, Pitta, and Kapha—is the root cause of all allergic reactions. When these Doshas are not in their optimal state, the body's ability to eliminate accumulated toxins diminishes due to a weakened immune system. This imbalance aggravates allergic responses. If this condition persists over time, it can lead to chronic allergies.

Allergic symptoms vary depending on the type of allergen involved. Some allergens affect the skin, causing various dermatological conditions, while others may lead to nasal congestion and respiratory issues. Certain food allergens can disturb the digestive system, resulting in symptoms such as vomiting and bowel disorders.

The Ayurvedic approach to treating allergies focuses on addressing the root cause rather than simply relieving the symptoms. This makes Ayurveda a unique and holistic system of healing that aims for long-term relief and overall well-being.

In today's modern world, people are increasingly exposed—knowingly or unknowingly—to environmental toxins that may act as allergens. These exposures contribute significantly to the development of allergic conditions.

Classical Ayurvedic texts also discuss allergic disorders. For instance, Acharya Charaka described conditions like *Udarda* under *Kaphaja Nanatmaja Vyadhi* and *Kotha* under *Raktapradoshaja Vikara*. Similarly, Acharya Bhava Prakasha and Madhava have referenced *Shitapitta* as an allergic condition. Additionally, concepts like *Viruddha Ahara* (incompatible food) and *Dushi Visha* (low-grade toxins) can be interpreted in the context of allergies.

#### Objectives:

To understand the concepts related to allergy in Ayurveda.

#### Materials and methods:

Data is collected from Ayurvedic texts and commentaries on *Brihatrayee* and Data is analysed and interpreted.

#### Review of literature

The term 'Allergy' is defined as hypersensitivity of body to allergen. Hypersensitivity is defined as an exaggerated or inappropriate state of normal immune response with onset of adverse effects on the body. The lesions of hypersensitivity are a form of antigen antibody reaction. These lesions are termed as hyper sensitivity reactions<sup>3</sup>.

Allergies can be broadly classified into common allergic disorders and specific allergic disorders. Common allergic conditions include urticaria, angioedema (including hereditary angioedema), atopic dermatitis, allergic conjunctivitis, allergic rhinitis, allergic asthma, food allergies, drug allergies, and anaphylaxis<sup>4</sup>.

In addition to these, certain specific allergies such as insect venom allergy, peanut allergy, and birch oral allergy syndrome are also observed.

Various factors contribute to the onset and severity of allergic conditions. These include genetic predisposition, environmental influences, and altered lifestyle patterns, all of which act as significant triggers for allergic reactions.

It is challenging to directly correlate the concept of allergy in modern medicine with any single disease described in Ayurveda, as Ayurveda does not use the term "allergy" explicitly. However, the concept itself is not foreign to Ayurvedic Samhitas. Although the word "allergy" is absent, similar conditions and explanations can be found throughout classical Ayurvedic texts.

While modern medicine has significantly contributed to the understanding of allergies—especially in identifying certain etiological factors more clearly, and even introducing some new ones—Ayurveda also offers valuable insights. The classical texts provide a comparable depth of knowledge regarding the origin, symptoms, and management of conditions resembling allergies, albeit within a different conceptual framework.

A novel disease must be analyzed based on three essential components: Disease patterns (*vikaara prakrti*), disease targets in the body (*adhishtana*), and factors influencing the disease (especially etiological ones, *hetu*)<sup>5</sup>. These components connect across eleven domains namely, *dushya* (body tissue), *desha* (habitat), *bala* (strength-of patient and disease), *kaala* (period), *agni* (digestive power), *prakrti* (Baseline constitution), *vaya* (age), *satva* (mind), *saatmya* (conducive factors), *ahara* (diet), *avastha* (stage)<sup>6</sup>, requiring the analysis throughout the larger framework.

## MATERIALS AND METHODS

Literary review

Genetics

Allergic diseases often run in families. Identical twins share the same allergic conditions approximately 70% of the time, while non-identical twins do so about 40% of the time.<sup>7</sup> Children of allergic parents are more likely to those in children of non-allergic parents. However, specific allergies do not always follow hereditary patterns; for example, parents allergic to peanuts may have children who are allergic to ragweed. While the tendency to develop allergies is inherited and linked to irregularities in the immune system, the specific allergens involved are not necessarily passed down.<sup>8</sup> The risk of allergic sensitization and allergy development varies by age, with young children being the most susceptible. Multiple studies have shown that IgE levels peak during childhood and decline significantly between the ages of 10 and 30.<sup>9</sup>

Researchers have sought to identify genes involved in inflammation and the maintenance of mucosal integrity. The genes associated with the severity, progression, and development of allergic diseases primarily function in four key areas: regulating inflammatory responses (e.g., IFN- $\alpha$ , TLR-1, IL-13, IL-4, IL-5, HLA-G, iNOS); maintaining the vascular endothelium and mucosal lining (e.g., FLG, PLAUR, CTNNA3, PDCH1, COL29A1); mediating immune cell function (e.g., PHF11, HIR, HDC, TSLP, STAT6, RERE, PPP2R3C); and influencing susceptibility to allergic sensitization (e.g., ORMDL3, CHI3L1).<sup>10</sup>

Several studies have explored the genetic profiles of individuals predisposed to allergic diseases, uncovering a complex polygenic architecture. Specific genetic loci—such as *MIIP*, *CXCR4*, *SCML4*, *CYP1B1*, *ICOS*, and *LINC00824*—have been directly linked to allergic conditions. Additionally, some loci, including *PRDM2*, *G3BP1*, *HBS1L*, and *POU2AF1*, exhibit pleiotropic effects, being associated with both autoimmune and allergic disorders. These genes participate in common inflammatory pathways across various epithelial tissues—such as the skin, esophagus, vagina, and lungs—underscoring shared genetic contributors to the development of asthma and other allergic diseases.<sup>11</sup>

Genome-wide expression, genetic variation (microarray based as well as exome), and epigenome

(global methylation and array based) studies on extreme Prakriti healthy individuals that have predominance of one of the doshas, have provided molecular correlates of tridosha (Prasher et al., 2008; Govindaraj et al., 2015; Rotti et al., 2015; Abbas et al., 2020, 2022). For instance cell proliferation and DNA damage response differentiates Vata Prakriti, T-cell mediated immunity, elevated metabolism and inflammation in Pitta Prakriti, and lipid profiles and BMI-associated correlates differentiate Kapha have been observed from expression, epigenetic as well as genetic studies (Prasher et al., 2008; Rotti et al., 2015; Abbas et al., 2020, 2022).

Immunophenotypes of predominant Prakriti Subjects: 222 Males from diverse ethnicity of predominant Prakriti male individuals – V-70, P-57, and K-95 (Satyamorthy et al., 2014).

Immunophenotyping using fluorochrome labelled antibodies using FACs analysis – CD3, CD4, CD8, CD14, CD25, CD56, CD 69, CD71, and HLADR.

Pitta: positive correlation with CD14 associated with hypersensitivity reaction Satmya and Asatmya: "Satmya" refers to factors that the human body can naturally accept and adapt to without any harm or discomfort. These factors contribute to physical well-being and support healthy development. When certain habits or substances are used regularly and become well-suited to an individual over time, they are known as "Oka Satmya."

Satmya is classified into three types: superior (pravara), inferior (avara), and moderate (madhyama). Another mode of classification identifies seven types of Satmya, based on the intake of individual rasas (tastes)—six types corresponding to each individual rasa, and a seventh type representing the combined use of all rasas. The use of all six rasas is considered superior Satmya, the use of only one rasa is considered inferior, and the use of a few rasas falls under the moderate type.<sup>12</sup>

A person with Pravara-Satmya is easier to treat compared to someone with Avara-Satmya, as the latter provides fewer options for the physician in terms of diet and medication. All the types of Satmya mentioned above fall under Oka-Satmya, a term that refers to Abhyasa-Satmya—suitability or compatibility developed through regular and habitual use.<sup>13</sup>

According to Acharya Sushruta, *Satmya* refers to substances or regimens that do not harm the body, even if they are contrary to an individual's prakriti (constitution), season, disease condition, or physical activities. It is also used as a synonym for the term "Upashaya", which means something that brings relief or is beneficial.<sup>14</sup>

Asatmya is a substance that is not conducive to the body is referred to as Asatmya or unwholesome, and it can lead to the aggravation of all the doshas.

A substance that is not *Satmya* (suitable or accustomed) to an individual's body may lead to *Asatmyaja Roga* (allergic or incompatibility-related diseases). *Asatmya*, also known as *Anupashaya*, is considered the opposite of *Satmya*.

According to Ayurveda, the different ways and means by which a substance becomes unwholesome or allergen to an individual is explained under the concept of *Viruddha*, *Asatmya*.

*Viruddha Ahara* (unwholesome diet): Food items that disturb the natural state of body tissues are considered *Ahitkar* or unwholesome. These foods are essentially incompatible with the *Dhatu*s (body tissues).<sup>15</sup>

According to Ayurveda, *Viruddhahara* (incompatible food) is considered a major cause of various systemic disorders. Individuals who regularly consume such incompatible food combinations are more susceptible to a wide range of health issues. Understanding the underlying mechanisms by which *Viruddha Ahara* contributes to metabolic disorders is crucial. It is also important to explore how certain food combinations interact and lead to disease. The concept of *Viruddha Ahara* is clearly defined by Acharya Charaka.<sup>16</sup>

Ayurveda literature has described various types of *Viruddha Ahara*,<sup>17</sup> which can be summarized as follows.

*Desha* (place) *Viruddha*; *Kala* *Viruddha*; *Agni* *Viruddha*; *Matra* (quantity) *Viruddha*; *Satmya* (wholesome) *Viruddha*; *Dosha* *Viruddha*; *Sanskar* (mode of preparation) *Viruddha*; *Veerya* (potency) *Viruddha*; *Koshtha* *Viruddha*; *Avastha* (state of health) *Viruddha*; *Kram* (sequence) *Viruddha*; *Parihar*

*Viruddha*; *Upachar* (treatment) *Viruddha*; *Paak* (cooking) *Viruddha*; *Samyoga* (combination) *Viruddha*; *Hriday* *Viruddha*; *Sampad* (richness of quality) *Viruddha*; *Vidhi* (rules for eating) *Viruddha*.

The loss and destruction of all seven *dhatu*s (body tissues) can result from the intake of poison (*visha*), as its properties are inherently antagonistic to those of the *dhatu*s. Poison affects even specific parts of the body or tissues (*eka deshaja*). Similarly, the consumption of *kshara* (alkaline substances) can lead to the destruction of the *shukra dhatu* (reproductive tissue), causing a loss of vitality and strength. Another form of incompatibility is *Jati Asatmya*, which refers to species-related dietary incompatibilities, such as the consumption of *gomamsa* (beef) or *manushya mamsa* (human flesh), which are not suitable for human beings. *Ritu Asatmya* arises when food is consumed against seasonal suitability; this is known as *Rituviparita Ahara*. *Roga Asatmya* occurs when inappropriate foods are taken during illness—for instance, consuming curd in *Shotha* (inflammatory conditions) is considered *roga asatmya*. *Vyayama Asatmya* refers to the incompatibility caused by excessive exercise in physically weak individuals. *Udaka Asatmya* involves the use of water that is unpalatable or unsuitable due to regional differences. Finally, *Divaswapna Asatmya* refers to the adverse effects of sleeping during the day, which is contraindicated in certain diseases such as *Shvasa* (respiratory disorders) and *Timira* (vision disorders), where daytime sleep is considered incompatible and harmful.

*Dushi visha*

This is a fundamental and unique concept in Ayurveda that can be directly correlated with allergies. "Acharya Sushruta, in the *Kalpa Sthana*, describes that when a person is afflicted by artificial or natural toxins, they are treated with antitoxic therapies. However, in some cases, complete elimination of these toxins from the body is not possible. These toxins may remain in a dormant state for a prolonged period."<sup>18</sup>

Acharya Charaka explains that the intake of toxic drugs with low potency (*Hina Veerya*) can remain in a dormant state within the body for many years without causing any immediate harm. This latent state is

maintained due to the covering (Avrita) effect of Kapha-related Dhatu Dushti.<sup>19</sup>

Chakrapani, commenting on Acharya Charaka's statement, explains that *Dushivisha* vitiates the *Dhatus* after a long period, once favorable conditions arise.<sup>20</sup> Further elaborating on this, Sushruta states that when causative factors such as *Desha* (place), *Kala* (time), *Anna* (diet), and *Divaswapna* (daytime sleep) become favorable for *Dushivisha*, it gains potency, vitiates the *Dhatus*, and leads to the manifestation of disease.<sup>21</sup>

## DISCUSSION

*Asatmya* refers to substances, diets, or environmental exposures that are unsuitable for a particular individual's constitution (*Prakriti*) or current state of health. Just as an allergic reaction occurs when the body perceives a foreign substance as a threat, Ayurveda suggests that continuous exposure to *Asatmya* substances weakens the system and triggers adverse reactions. These reactions can manifest as skin eruptions, respiratory issues, or gastrointestinal disturbances—symptoms commonly observed in allergies.

*Viruddha Ahara* refers to the intake of food combinations that are inherently antagonistic and can disturb the balance of *Doshas*. Common examples include milk with sour fruits, or heating honey. These combinations, when consumed regularly, can produce toxic metabolites, disturb digestion (*Agni*), and lead to hypersensitivity reactions over time. Many modern food allergies can be understood in this context, especially those linked to food intolerances and sensitivities.

*Dushivisha* is a unique concept in Ayurveda that refers to residual or semi-processed toxins from environmental, medicinal, or dietary sources that persist in the body in a dormant state. These toxins do not produce immediate symptoms but may become active and harmful when triggered by favorable factors such as poor diet, stress, seasonal changes, or lifestyle habits like *Divaswapna* (daytime sleep). This is remarkably similar to certain delayed allergic reactions or chronic hypersensitivity states.

## VII. CONCLUSION

Allergies are hypersensitive immune responses to substances that are otherwise harmless to most individuals. While the term "allergy" is not explicitly mentioned in classical Ayurvedic texts, its pathophysiology can be closely correlated with several Ayurvedic concepts, particularly *Asatmya*, *Viruddha Ahara*, and *Dushivisha*. These concepts provide a deeper understanding of allergic reactions from an Ayurvedic perspective and offer holistic insights into their prevention and management. These Ayurvedic concepts of *Asatmya*, *Viruddha Ahara*, and *Dushivisha* offer profound insights into the etiology and progression of allergic conditions. These frameworks not only emphasize the importance of individualized treatment and dietary compatibility but also highlight the role of long-standing, latent toxins in disease manifestation. Understanding allergies through these lenses can enrich modern management strategies and foster a more integrative approach to health and well-being.

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