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Dhatusarata and its utility in the assessment of innate immunity: A review

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Abstract

Acharya Sushruta says that the supreme essence of all the *Dhatus* beginning with Rasa and ending with *Shukra* is known as *Ojas* and that is the *Bala* (strenth) of the body. And strength is not depending only on physical build up but it depends on the *Sara* means the excellence quality of *Dhatus*. In the *Ayurvedic* text, this *Dhatusarata* is described with respect to *Sapta Dhatu* and Sattva (mind) i.e. *Ashtavidhsarata* which is helpful in determining the degree of strength. Examination of *Dhatusarata* is done at physical and psychological level. Thus biological immunity can refer to constitutive physical innate mechanisms, such as the physical protection afforded against infection by skin, the activity of natural killer (NK) cells against virus-infected cells, or the natural resistance power of the body. It is of two types innate and adoptive. Innate immunity, also known as native immunity. It is defined as the first line of defense against pathogens, representing a critical systemic response to prevent infection and maintain homeostasis, contributing to the activation of an adaptive immune response.

Aim: To interpret the utility of *Dhatusarata* in the assessment of Innate immunity.

Objectives: To take a review on Innate immunity as per Modern science to interpret the utility of *Dhatusarata* in the assessment of innate immunity.

Keywords: Innate immunity; *Dhatusarata*; Different types of *sara*; Objective parameters for *dhatusarata*

1. Introduction

1.1. Immunity

The immune system protects the body from possibly harmful substances by recognizing and responding to antigens. Antigens are substances (usually proteins) on the surface of cells, viruses, fungi, or bacteria. Non-living substances such as toxins, chemicals, drugs, and foreign particles can also be antigens. The immune system recognizes and destroys, or tries to destroy, substances that contain antigens. It is of two types: Innate and adoptive [1-5].

1.2. Innate immunity

Humans are exposed to millions of potential pathogens daily, through contact, ingestion, and inhalation. Innate or non-specific (antigen-independent), immunity is the defense system by birth. It is the first line defense. Tissue-resident innate immune cells serve as critical first responders in host defense. This includes epithelial cells, DCs, macrophages, mast cells, and innate lymphoid cells. Epithelial cells provide a first line of host defense by maintaining a barrier function, trapping and killing potential pathogens, and activating additional innate immune cells [6]. It protects against all antigens as self and non-self. Innate immunity involves barriers that keep harmful materials from entering our body. These barriers form the first line of defense in the immune response. Examples of innate immunity include: Cough reflex,

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Enzymes in tears and skin oils, Mucus, which traps bacteria and small particles, Skin, Stomach acid. Innate immunity also comes in a protein chemical form, called innate humoral immunity. Examples include the body's complement system and substances called interferon and interleukin-1 (which causes fever) [7]. An important function of innate immunity is the rapid recruitment of immune cells to sites of infection and inflammation through the production of cytokines and chemokines (small proteins involved in cell–cell communication and recruitment). Cytokine production during innate immunity mobilizes many defense mechanisms throughout the body while also activating local cellular responses to infection or injury [8].

1.3. Dhatusarata

If we take concept of *Ayurveda* the most purified or vital part of *Dhatus* is known as *sara*. *Sara* can also defined as essence of *Dhatus* (Tissue) that provide power, perfectness, strength and constancy to the body. From birth to death, genetic design of *tridosha*, i.e. *Prakriti* for no reason undergoes changes, but conflicting to *Prakriti*, *Sarata* of *Dhatu* can be distorted each instant. Dissimilarity in food, home, period, and way of life can adapt *sarata* of every *Dhatu*. If we are eager for good physical condition, contentment, pleasure, long life then everyone should pay notice to preserve equilibrium of root factors of body (*Dosha*, *Dhatu* and *Mala*) there is effect of *Sara-Asar* condition of *Dhatu* on physical and mental health. *Aacharya Charaka* has advised to examine *Sara* of every *Dhatu* to recognize force of *Dhatu* as fine as force of mind. If we see the mode of diagnosis in *Ayurveda* i.e. *Dashvidhapariksha* of *Ayurveda* it has been known that *Sara pariksha* is one of the best way of diagnostic tool i.e. knowing the basics of *Ayurvedic* concept of *DhatuSarata* resolve Examination of *'Saratva'* indicates *'Bala'* of an individual. One cannot function without *'Bala'*. Because it fit the aim of *Ayurveda* as "*swasthsyaswasthyarakshanam, Aturasyavikarprashamanam*" which means cure maintain the healthy individual and heal the diseased person . The knowledge of *Sarata* is important. Also, it can be stated that the person who is having good *sarata* definitely has a good *Bala*. So physician needs to know his *'Bala'*. If we see the most important diagnostic way than *sara* can be categorized in to 8 forms or we can say there are 8 types of Sara - 1. Twaksara 2.Raktasara 3.Mamsasara 4.Medassara 5.Asthisara 6.Majjasara 7.Shukrasara 8.Sattvasara [9].

2. Review of Literature

2.1. Different *Sara* according to Different *Samhita's*

Different *Dhatusara* available in various texts of *Ayurveda* as discussed below:-*Rasa/Twaksara* Individuals have good lusture in *Twak* or skin and are considered by unctuous, smooth, soft, clear, fine, less numerous, deep rooted and tender hair and shiny skin. Such Discrete are endowed with pleasure, good affluences, influence, enjoyment, intelligence, knowledge, health, enthusiasm and longevity. One, whose skin and hairs are good looking and soft, is to be understood as *Tvak Sara* person. *Uttam twaksara* person usually not suffer from skin disorders, their skin looks very fresh .*Uttam twaksara* person enjoy quality of fast wound healing. Next *sara* is *Rakta Sara* which Individuals having the excellence of *Rakta* or blood are characterized by unctuousness, red color,beautiful stunning appearance of the ears, eyes, face, tongue, nose, lips, soles of the hand and feet, nails,forehead and genital organs. Such person is gifted with happiness, great genius, enthusiasm, soreness, moderate strength and inability to express [9]. *Rakta Sara* person is known to enjoy unctuous and coppery nails, eyes, palate, tongue, lips, palms and soles. *Mamsa Sara* person have the fineness of the *Mamsa Dhatu* are considered by constancy, heaviness, beautiful entrance and chubbiness of temples, forehead, nape, eyes, cheeks, jaws,neck,shoulder, abdomen, axilae, chest and joints of upper and lower limbs being covered with flesh. Such person endowed with forgiveness, patience, non-greediness, wealth, knowledge, happiness, simplicity, health, strength and longevity .*Mamsa Sara* person are known to enjoy few despairs in the body, have well covered bones and joints and musculature. *Medo sara* person have the brilliance of the *Medo Dhatu* are characterized by the abundance of unctuousness in appearance, voice, eyes,hair of the head and other parts of the body, nail, teeth,lips, urine and feces. They brilliant with wealth, power, happiness, enjoyment, charity, simplicity and delicate habits. *Medosara* person are known to pass sycophantic urine and sweat, has a smooth speech, a large body and are incapable of doing bodily labor. *Asthisara* people have the excellence of the *Asthi Dhatu* are branded by robust heels, ankles, knees, forearms, collar bones, chin, head, joints, bones, nails and teeth .Such Separate are very enthusiastic and active and are able with strong and firm bodies as well as longevity . *Ashtisara* people possess a big head and shoulders and big teeth, big jaws, bones and nails according to *Acharya's*. *Majja Sara* Individual have the excellence of the *Majja Dhatu* and are categorized by softness of organs, strength, unctuous skin and voice and tough long and rounded joints .They capable with longevity, strength, wealth, knowledge, progeny and honour. *Majjasara* person and not obese not lean and thin, but they have caliber to be powerful to possess mellow and sonorous voice and is endowed with good fortune and have big eyes. Lastly *Shukra Sara* Individual needing the fineness of the *Shukra Dhatu* are characterized by gentleness, gentle look having eyes as if full with milk, happiness, having teeth which are ingratiating, round, strong, even and beautiful, clean and unctuous complexion and voice, stunning looks and large buttocks. Such individual are loved by women, they are strong and endowed with happiness, power, health, wealth, honor and children. *Shukra sara* person is known to possess

unctuous, compact and white bones, teeth and nails and has excessive sexual desire and children. If we talk about Satva Sara, these persons have the brilliance of the mental talents are characterized by good memory, believes in god, grateful, intelligent fond of cleanliness, enthusiastic, cautious, having patience, brave, fighting spirit and devoid of unnecessary tensions and worries, proper way of thinking, serious and deep thinking, proper activity and are well-wisher and helping nature. The person is endowed with good memory, devotion, intelligence, cleanliness, valor, bravery, benevolent thought and actions should be under stood as *Satvasara* person of outstanding of mind. [10-11]

Dhatusarata must be done for the following-

- To assess strength (immunity/fitness) of *Dhatu*.
- To give proper treatment for *Asara Dhatu*
- To improve immunity of *Asara* and *Madhya Sara Dhatu* with proper food and medicines.
- In giving *Rasayan Chikitsa*.

Ayurveda emphasizes the people having good immunity and people who have poor immunity or people who lack immunity. *Dhatu sarata* (tissue excellence) is a quality assessment of seven *dhatus*. *Dhatu* with excellent or optimal qualities is called *Dhatu sarata*. It is divided into three types: *uttam sara dhatu* (best quality), *madhya sara dhatu* (medium quality), and *asara sara dhatu* (low quality). *Uttam dhatu sarata* has good strength and good immunity. *Asara dhatus* are tissues with poor strength and immunity. Hence, they are prone to diseases. *Dhatu sarata* is useful in assessing the strength of each *dhatu* and the immunity of a person [12]

3. Review about the Objective Parameters for *Dhatu-Sara*

Following objective, modern strictures can be applied to sustenance evaluation of type of *Dhatu-Sara.* Assessment of *Dhatu-sara* Objective Parameters for *Rasa-sara* Serum electrolyte and blood sugar level, for *Rakta-sara* Haemoglobin percentage, for *Mamsa-sara* Hand grip test with the help of dynamometer, for *Meda-sara* Blood cholesterol and triglyceride level, for *Asthi-sara* bone mass density, for *Shukra-sara* Semen analysis. According to modern knowledge *Sara* can be considered as the optimum degree of genetic code of an individual's DNA with respect to particular *Dhatu*[13]

3.1. Innate immunity

Immunity is the resistance of the body against the pathogens and their toxic products. It is classified as: Innate immunity and Acquired immunity. Innate immunity is the inborn capacity of the body to resist the pathogens. It is due to genetic and constitutional make up of an individual. It may be specific or non-specific. Also it may be species, racial and individual. It is developed mainly in two forms: Mechanical barrier is formed against invading micro-organism by the intact skin and mucosa. Surface secretions also provide first line defense, as secretions from sebaceous glands, saliva, gastric juice, tears. Humoral defense provide innate immunity by the non-specific microbicidal substances present in the body fluids. Cellular defense provide non-specific innate immunity as, phagocytes, natural killer cells (NKcells), eosinophil [14].

4. Discussion

Innate immunity is the first line defense of the body which is genetic and also formed due to constitutional make up of an individual. It acts very quickly: For instance, it makes sure that bacteria that have entered the skin through a small wound are detected and destroyed on the spot within a few hours. The innate immune system has a power to stop germs from spreading, though the body. Examination of *Sara* indicates *Bala* (Physical and mental strength) of an individual. One cannot consider *Bala* of an individual by his appearance or body build, as strong or weak. To know the specific *bala* of an individual one should examine *Dhatusarata*. Body cannot resist without *Bala.* To maintain health and to cure disease and for homeostatic condition, there is need to know this specific *Bala* of the body. Individuals who possessed excellence of the *dhatus,* i.e., *Sarvasara*, are full of great strength, resistance to difficulties, firm and well build body, resistance for diseases, and slowness of ageing process.

5. Conclusion

From above discussion it is clear that to maintain health and to resist diseases one should have a good physical and mental strength. Natural immunity which is generally nonspecific has got a greater relative value and wider range than

the artificial one. We can have greater safety if we can maintain or raise our natural immunity. To examine the specific strength or innate immunity of an individual one should examine *Dhatusarata*.

Compliance with ethical standards

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Disclosure of conflict of interest

None conflict of interest in this review article.

References

[1] Dr Ambikadatta Shastri, Su.Su.15/24, Chaukhambha Sanskrit Sansthan, Varanasi,Reprint,2007,Page no.60

[2] Dr Ambikadatta Shastri, Su.Su.35/18, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint, 2007, Page no.132

[3] Sciencedirect.com/topic/immunology-and-microbiology/innate-immune-system

[4] J.R.Rodgens, in Encyclopedia of Microbiology(Third edition), 2000, Immunity, Sciencedirect

[5] En.wikipedia.org/wiki/Immunity-(medical)

[6] A.Wesley Burks MD, in Middleton's Allergy: Principle and Practice 2020, sciencedirect.com/topics/medicine-and-denistry/innate-immunity

[7] Tak PP, Bresnihan B. The pathogenesis and prevention of joint damage in rheumatoid arthritis: advances from synovial biopsy and tissue analysis. Arthritis Rheum. 2000;43(12):2619–33.

[8] Charo IF, Ransohoff RM. The many roles of chemokines and chemokine receptors in inflammation. N Engl J Med. 2006;354(6):610–21.

[9] Sharma PV. CharakaSamhita, Vol.1. reprint edition 2011,ChaukhambhaOrientalia;Varanasi, India. (Jaikrishnadas Ayurveda Series No.36).Cha.Vi.8/94 p375

[10] Sharma PV. CharakaSamhita, Vol.1. reprint edition 2011,ChaukhambhaOrientalia;Varanasi, India. (Jaikrishnadas Ayurveda Series No.36).Cha.Vi.8/102- 106, p-378.

[11] Murthy KRS. Sushruta Samhita, Vol.1: ChaukhambhaOrientalia;Varanasi, India 2008Su.Sutra. 35/16 p 245-246. 4. Tewari PV VriddhaJivaka, KashyapaSamhita, Sutrasthana,, reprint ed.2002 ChoukhambhaVisvabharati, Varanasi,Kashyapa Su.28/36-37 p 86.

[12] B.M.N.Kumar, The concept of immunity in Ayurveda W.S.R.to Covid-19-Review paper, Journal of Ayurveda, 2020, Vol 14, Issue 4, Page 85-91

[13] Dr.P. S. ByadgiAyurvediya Vikrti – Vijnana and RogaVijnana, Vol.1,,Choukhamba Bharti Academy, Reprint 2017,Chapter 19,p 449 9.Dr. Nandini Dhargalkar, SharirKriya Vidanan, Vol. II,,Choukhamba Bharti Academy, Reprint 2008,Chapter 7.2,-p 363

[14] Indu Khurana, "Text book of Medical Physiology", ELSEVIER, reprint, 2009, Page no 188.