

Immunological Disorders and Preventive Measures in Ayurveda: A Conceptual Study

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Abstract: Among the immunological disorders, diseases resulting from excessive immune function are hypersensitivity and autoimmunity. Autoimmunity is underlying cause of more than 100 chronic illnesses and included in top 10 leading causes of death. Number of systemic and organ specific diseases involved in immunological disorders. As auto-reactivity and self-antigen focus seems to be basic phenomenon, diseases are difficult to care and always lead to chronicity. Also there is stronger influence of environmental factor as opposed to genetic factor on autoimmune development. Way to combat the rise in autoimmune diseases is to understand risk factor and to prevent development of auto immune diseases. Ayurveda being holistic science believes in immunity in terms of Bala and Dhatusarata. Bala (strength or immunity) developed at the time of gestation and it is related to prakruti (specific physch of an individual). Immunity is very much depend upon samya (normacy) of Tridosa and Saptadhatu (physiological elements of body). Vitiation of dosha is prime etiological factor affecting bala and also lead to chronicity of disease. According to Ayurveda, it can be prevented by adopting proper regimen. In addition to regimen, Rasayana therapies (rejuvenating therapy) following panchakarma boost the immune response. In present article, focus is laid on rasayana therapy with its properties and way of action by means of which it help to maintain immunity or prevent disorders.

Keywords: Autoimmunity, Bala, Dhatusarata, Panchakarma Rasayana, Tridosha

1. Introduction

Globally the millennium developmental goals^[1] naturally set to improve health with reduction in global burden of diseases. Global burden of disease assess the mortality and disability. One of the complex category of disease exert burden is 'Autoimmunity'. Autoimmunity is group of illnesses that involve almost every organ system. It includes diseases of nervous system, digestive system, endocrine system, skin, connective tissue, eye, blood, blood vessels etc. Autoimmunity is one of the forms of non-communicable diseases which is an emerging problem. Autoimmune diseases strike women 3 times more than men. Thyroiditis, Grave's disease, Rheumatoid arthritis, Ankylosing spondylosis, Muscular dystrophy, Psoriasis, Neuropathy, IBD, Haemolytic anaemia, Multiple sclerosis are some of autoimmune diseases found in society^[2]. It has been crystal clear that these diseases are nothing but abnormally triggered immune response.

The immune response or immunity mentioned in modern science is very well described in Ayurveda as *vyadhikshamatwa*. The concept of *vyadhikshamatwa* is more precisely described in terms of *bala* (strength) and *oja* (extract of *dhatu*). Acharya Chakrapani has mentioned the *vyadhikshamatwa* of two types^[3]

- 1) *Vyadhibalavirodhi* (immunity against disease)
- 2) *Vyadhi-utpadpratibandhka* (immunity prevent onset of disease)

Bala is totally depend upon the physical and mental status^[4] of individual while *oja* is nothing but *saptadhatu-sara*^[5] (extract of basic components of body). All these can be achieved by *ahar* (diet). Especially in *bala*, *Kalaj* and *Yuktikrut bala*^[6] can be maintained by –

- 1) *Ahar*^[7] (diet)
- 2) *Rasayana* (rejuvenation) therapy

- 3) Preventing vitiation of *dosha* and *dhatu*s (basic elements)
- 4) *Panchakarma* (purificative procedures)

In all above factors, we assume the *rasayana* drugs and therapy may prove because of its properties very beneficial to boost the immunity^[8] to prevent these diseases.

2. Discussion

The concept of auto immunological disorders is explained in the modern science, but still remains poorly understood and recognized than any other category of disease. The world incidence and prevalence of autoimmune diseases is increasing. Autoimmune diseases represent the 4th largest cause of disability in US. Autoimmune disorders are the range of diseases in which immune response is triggered against self-antigen result in tissue damage and dysfunction. Several mechanisms are involved in the pathogenesis. Deformity in immune regulation, genetic expression and environment contribute the pathogenesis. Lymphocyte, antigen presenting cells and cytokines are the factors responsible for immunity. HLA expression, MHC expression and tolerance initiate pathogenesis which is always complex and may be with hypersensitivity or immunosuppression^[9]

Immunologic tolerance i. e. state in which individual is incapable of developing immune response to specific antigen is basic cause of autoimmunity. Impairment in central and peripheral tolerance leads to improper clonal deletion of auto reactive T and B lymphocytes in lymphoid organs and escape of negatively selected cells in peripheral tissue. These auto-reactive lymphocytes causes responsiveness against self-antigen leading to tissue injury.^[10]

Breakdown of T-cell energy, failure of T-cell mediated suppression, polyclonal lymphocytic activation are common

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causes of peripheral tolerance^[10]. Microbial agents also share autoimmunity by cross reacting with self-antigen. Super-antigen can widely activate a larger pool of T and B cells which may be auto-reactive.^[11] As autoimmune disorders affect multiple systems, their symptoms are often misleading which hinders accurate diagnosis.

The concept of immunity described in Ayurveda is very elaborative and comprehensive. The immunity or defence mechanism of the body depends on various factors. Both the types of *vyadhikshamatwa* i.e. *vyadhibalavirodhi* and *vyadhiutpad-pratibandhaka*^[3] can be easily correlated and compared with specific immunity and innate immunity mentioned in modern science.

Ayurveda assumes that normal synthesis of *Ahar-rasa* (nutritional factor responsible for formation of physiological elements), *Tridosha-samya*, *Dhatu-samya* (normalcy of elements) are basic need to develop and maintain immunity of an individual. *Bala* is second factor influencing immunity.^[4] *Sharir* and *manasbalas* are further classified as-

- 1) *Sahaj* (innate, genetic)
- 2) *Kalaj* (environmental)
- 3) *Yuktikrut* (achieved by dietetic and rejuvenation therapy)

We cannot do much more for *sahaj* and *kalaj* bala, but the *yuktikrutbala* can be achieved by maintaining proper *ahar* (diet), nutritious substances provided by *rasayana* and purification of vitiated *doshas*.

Oja is also an exclusive concept of Ayurveda. According to Ayurveda, *oja* is nothing but *saptadhatu-sarata* i.e. nutritious and pure extract of basic physiological elements in the body.^[5] It is also completely interrelated with *ahar-aharrasa-rasadhatu* which leads to synthesis of successive *dhatu*s. As *ojasarata* is maintained in the body with good quality, it will have eventually effect on *bala* which leads to proper *vyadhikshamatwa*. All these three factors are very much interlinked and interdependent. Surprisingly, *rasayana* (rejuvenation) therapy boost all these factors.^[8]

While defining *Rasayana*, *Acharya Charaka* has explained its following properties-

- 1) *Swasthyakara*- Very much involved in the process of improvement of health
- 2) *Urjaskara*- Enhances the energy formation in the body.

The *rasayana* therapy has its dual effect on the body. It will influence -

- 1) *Tridosha* (basic constituents of body)
- 2) *Saptadhatu* (physiologic elements of body)

Action of *rasayana* on *dosha*—
Dosha-shodhan (expulsion of vitiated *dosha* from body)
Dosha-shaman (suppression of slightly vitiated *dosha*)

Dosha-samya (maintain balance between *doshas*)

Action of *rasayana* on *dhatu*—
Dhatu-shodhan (expulsion of vitiated *dhatu*s from body)
Dhatwagni-samya (maintain normalcy of *dhatu* converting factors)
Dhatu-poshan (nourishment of *dhatu*s)
Dhatu-samya (maintain balance between *dhatu*s)

Action of *rasayana* on *ahar*—
Synthesis of *ahar-rasa* (synthesis of nutritional factor)

The vitiated *doshas* in the body will be purified with the action of *rasayana*. *Doshasamya* in turn lead to *dhatu-samya* which is disease free or healthy state of body^[12]. Use of *rasayana* will provide formation of high quality of *ahar-rasa* which later on produces all *dhatu*s with normal properties and this '*dhatu-sarata*' is nothing but '*bala*' (immunity).

In the same way, the *rasayanas* have effect on *dhatu*s. Vitiated *dhatu*s will be purified which results in *dhatu-samya*. Eventually this *dhatwagnisamya* (normalcy of factor responsible for metabolism of *dhatu*s) will provide nourishment to *dhatu* to make *dhatu-samya* in the body.

Homeostatic balance of *dosha-dhatu-aharrasa* leads to *bala* (immunity). According to *Acharyas*, '*shodhan karma*' (purification) should be applied prior to the *rasayana* therapy for its benefits^[13]. *Panchakarma* help to expel *doshas* and to maintain *prakruti*.

As in definition quoted by Ayurveda, *rasayana* is extract enriched with nutritional elements (*rasa*) should be circulated (*ayan*) throughout the whole body. These healthy conditions i.e. *dosha-dhatu-samya* have been maintained and brought because of following exceptional rejuvenating properties of *rasayana*.

1. Antioxidant-*Rasayana* acts as free radical scavengers.
Rasayana reduces load of hydroxide, peroxide and oxygen free radicals.
Rasayana also reduces free radical mediated haemolysis.
2. Anti-inflammatory- *Rasayana* decreases hydrolytic enzymes and thus prevent inflammatory damage.
3. Cytoprotective- With the use of *rasayana*, disease do not lead to chronicity.
4. Immunomodulator property- *Rasayana* stimulate phagocytosis.
Increases phagocytic index.
Increases lysosomal secretions of macrophages.
Increases bone marrow cellularity.
Delay ageing process.
Improve healing
Prevent diseases in early ages.

All these properties are eventually bringing through the *dosha-samya* and *dhatu-samya* in the body. Both the conditions are responsible to maintain homeostasis.

Ayurveda has mentioned some drugs having these properties as below-

Rasayana	Latin name	Rasayana property	Proven modern property
Aamalaki	<i>Emblica officinalis</i>	Dhatushodhan, Doshamy	Antioxidant ^[14]
Haritaki	<i>Terminalia chebula</i>	Dhatuwardhan, Dhatushodhan, Dhatuposhan	Antioxidant ^[15]
Guduchi	<i>Tinospra cordifolia</i>	Dhatushodhan, Vayasthapan, Majjaprasadhan	Immunomodulator ^[16]
Shatavari	<i>Asparagus recemosus</i>	Dhatupushti, Rasa-rakta-mansa pushti	Immunomodulator ^[17]
Bala	<i>Sida cordifolia</i>	Dhatuposhan, Saptadhatuwardhan	
Shankhah-pushpi	<i>Convolvulus pleuricolis</i>	Manodosh shodhan	Reduces nervous debility ^[18]

Apart from these drugs, the drugs like *Yashtimadhu*, (glyserrhiza glabra), *Mandukaparni* (Centella asiatica), *Ashwagandha* (Withania somnifera) having same *rasayana* properties.

In the same continuation of *rasayana* therapy, *Acharya Charaka* has mentioned a type of *rasayana* i.e. *Achar rasayana*.^[19] *Achar rasayana* mainly described about behaviour related things. There are so many do's and don't's with regards to attitude, good deeds, mental peace and manners. All these things are going to effect on mental status of an individual. The proper mental status will definitely help in maintaining homeostasis in the body. These do's and don'ts also improve the quality of the life style i.e. daily regimen and seasonal regimen. *Achar rasayana* is a preventive therapy to make the body disease free whereas *rasayana* boost the immunity.

3. Conclusion

Pathogenesis of autoimmune diseases show genetic, environmental and immunologic basis. These causative factors make the disease more complex. Absence of definite cause complicates the treatment. Prevention of triggering of autoimmune response or prevention of chronicity of diseases is the only solution to prevent tissue damage. We can achieve this with the effect of *rasayana* therapy. *Rasayanas* are responsible for normalacy of *dosha-dhatu*. This homeostatic balance of *dosha -dhatu* and *dhatu shodhan* improve immunological responses leading to prevention of auto-immunity. Anti-oxidant, anti-inflammatory properties also improve healing and thus prevent chronicity and damage. Regular use of *rasayana* therapy following *panchakarma* (purification procedures) may improve immunity and prevent autoimmunity.

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