



ORIGINAL RESEARCH PAPER

Ayurveda

IMPORTANCE OF RASAYANA IN IMMUNE DEFICIENCY DISORDERS

KEY WORDS: Immune Deficiency, Immunomodulators, Ojas, Rasayana, Vyadhikshamatwa

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ABSTRACT

Immunodeficiency is a condition in which body's immune system loses the ability to effectively fight against infectious diseases. It can be caused by lack of one or more components of immune system and can be due to inherited, acquired or drug induced causes. Most of immune disorders are acquired (secondary).

In Ayurveda, the concept of Immunity is somewhat nearer to vyadhikshamatva which implies a resistance against the loss of integrity, proportion and interrelationship of dosha and dhatus. Rasayana is a treatment in which the body constituents are prepared to adapt to selective tissue nourishment program. Rasayana increases the essence of each dhatu starting from rasa and enriches ojas. Thus there is tissue regeneration leading to vyadhikshamatva. Rasayana drug act as immunomodulators and thereby balancing immune system. certain daily food items and various drugs like shilajatu, centalla asiatica (mandukaparni), Tinospora cordifolia (Gudoochi), Embilica officianalis (amalaki) etc interact with the functioning of immune system and thereby mitigate immune related disorders. Thus rasayana helps to promote the health of immune deficiency individuals.

INTRODUCTION

Immunodeficiency diseases are one of the serious global health problem leading to increased mortality and morbidity. Immunodeficiency is the state in which the immune system's ability to fight against infectious disease is compromised or entirely absent. Immunodeficiency disorders can be inherited, acquired or drug induced. certain types of cancer, viral infections, AIDS, malnutrition, stress, can cause immuno deficiency conditions. An immuno compromised person may be particularly vulnerable to opportunistic infections, in addition to normal infections that could affect everyone. common symptoms of immunodeficiency include extreme susceptibility to contagious illness of allergy, fatigue, loss of energy, respiratory disorders, fever, loss of appetite, a general feeling of weakness and lethargy. Immunity in Ayurveda is not Immunity against a specific infectious agent or disease such as polio or rubella. In Ayurveda certain conditions like rajayakshma, ojkshaya, sannipatha jwara, cause immuno deficiency where loss of ojas is a cardinal feature. In Ayurveda, rasayana therapy is indicated for the prevention as well as for curing of immunodeficiency disorders. Rasayana improves the host resistance of an individual, helping to prevent ageing and diseases. It is used in chronic and severe debility of the body secondary to major illness including cachexia associated with rajayakshma, diabetes mellitus etc... Certain drugs are well known for their immunomodulator and antioxidant properties. Immunomodulation is an important attribute in the strengthening of immune competence in a controlled manner. Besides immuno modulatory action, rasayana drug act as antioxidant, antistress, anti inflammatory, antimicrobial, anti aging, anti arthritic and anti bacterial agent.

CONCEPT OF IMMUNITY

ACCORDING TO MODERN VIEW

Immune system is the body's defence against infectious organisms and other invaders. Through a series of steps called immune system attacks organism and substances that invade body system.

IMMUNE SYSTEM:

It consist of network of cells, tissues, and organ that help in recognition and destruction of foreign bodies. Leukocyt ep hagocytes, lymphocytes, bonemarrow, lymph nodes, tonsils, thymus, spleen all are the part of immune system.

- 1st line of defence: The body's first line of defence against pathogen is usually physical and chemical barriers which includes skin, sweat, tears, saliva, mucus etc.
- 2nd line of defence: If pathogen is able to get pass through body's first line of defence, the body rely on second line of

response called the inflammatory response.

- 3rd line of defence: If second line of defence fails, the immune system recognise, attacks, destroy, and remembers each pathogen that enters the body. It does this by making specialised cells and antibodies.

TYPES OF IMMUNITY

1. INNATE / NATURAL / NON-SPECIFIC IMMUNITY

Present from birth and it is the inborn capacity of the body to resist the entry of foreign bodies through body's first line of defence.

2. ACQUIRED / SPECIFIC IMMUNITY

Lymphocytes (T and B lymphocytes) are responsible for such type of immunity.

Based on the type of immune mediators involved, acquired immunity is of two types:

- a. **Humoral immunity:** It is mediated by secreted antibodies. It is called active type when the organism generates it's own anti bodies and it is called passive type when antibodies are transferred between individuals and species.
- b. **Cell mediated immunity:** It involves T lymphocytes alone. It is active when the T cells are stimulated and passive when T cells come from another organism.

Based on whether the host built up immunity itself or through another source, immunity is of two types:

- a. **Active immunity:** It occurs when one makes its own antibodies. It is a long term immunity. It is acquired through vaccination which helps the B lymphocytes to recognise the antigen and attack the antigen. similarly exposure to infections stimulates the production of memory cells which are then stored to prevent the infection in future.
- b. **Passive immunity:** It occurs when the antibodies comes from another source and is short term immunity.

Eg: passive immunity through mother's Brest milk.

Gamma globulin injection provides temporary immunity.

ACCORDING TO AYURVEDIC VIEW

Ayurveda emphasises the promotion of health through the strengthening of host defenses, to act as resistive force against physiological extremes as well as opportunistic ailment. This force computed as regards everyday wellness termed as vyadhikshamatwa. The resistance power of the body which prevents the development of disease is called immunity or vyadhikshamatva. Ayurveda conceives a unique concept of

ojas which is the vital essence of seven dhatus and besides this, the concept of immunity is interactively interwoven with concept of Agni, Bala, dhatuposhana, patency of srotas, normalcy doshas, dhatus. Equilibrium of dhatus is health and give rise to arogya that is the healthy state of being. The Bala or ojas is the basis of vyadhikshamatva. When there is loss of ojas or Bala, the person is more susceptible to various diseases or recurrent infections.

Factors influencing immunity: place of birth, time of birth, favourable weather, excellence of properties of food being consumed, excellence of physique, excellence of mental status, favourable factors related to nature, youthfulness, exercise and cheerful attitude.

Vyadhikshamatva in Ayurveda is also known as Bala which is of three types- Sahaja Bala, kalaja Bala, yukthikrta bala. Sahaja Bala is inherited which comes from parents. In kalaja bala, the time of day, season, one's age are important factors for enhancing immunity. Yukthikrta bala represents acquired immunity.

DISEASES OF IMMUNE SYSTEM

It involves two categories:

1. Immune deficiency disorders
2. Autoimmune disorders

IMMUNODEFICIENCY DISORDERS

An immunodeficiency disorder occurs when immune system is not functioning properly. Immune deficiency disorders are either congenital (primary) or acquired (secondary).

Examples for primary immunodeficiency disorders:

- X linked agammaglobulinemia
- Common variable immune deficiency
- SCID-Severe Combined ImmunoDeficiency

Secondary immunodeficiency disorder happens when infections attack the body. The main causes include severe burns, chemotherapy, radiation, diabetes, malnutrition etc. It includes:

- AIDS
- Cancers of immune system like leukemia
- Immune complex disorders like viral hepatitis
- Multiple myeloma

RISK FACTORS:

people with family history of primary immunodeficiency disorders, ageing, spleen removal, exposure to infectious fluids etc

Signs and symptoms: cold, diarrhea, sinus infections, pneumonia, meningitis, bronchitis, blood disorders including anemia, inflammation and infection of internal organs.

AUTOIMMUNE DISORDERS

In autoimmune disorders, the immune system mistakenly attacks body's healthy organs and tissues as though they are foreign invaders. It includes:

- Lupus- a chronic disease marked by muscle and joint pain
- Juvenile rheumatoid arthritis
- Scleroderma
- Ankylosis spondylitis
- Juvenile dermatomyositis

IMMUNOMODULATORS

Immunomodulators are drugs that either suppress (immunosuppressants) or stimulate the immune system (immunostimulants). These are active agents of immunotherapy.

The concept of immunomodulation emphasizes on enhancement of immune responsiveness of an organism against a pathogen by nonspecifically activating the immune system using immunomodulators. It provides a conventional chemot

herapy for a variety of disease conditions of impaired immune responsiveness or when a selective immunosuppressant has to be induced in autoimmune disorders and organ transplantation. The basic concept of immunomodulation exists in Ayurveda. The only difference is that modern concept of immunomodulation focuses only on direct attack over pathogen. Whereas in Ayurveda focus is to enhance the body strength through rasayana and vajeeekarana therapy.

CONCEPT OF RASAYANA AND MODE OF ACTION OF RASAYANA DRUGS

In Ayurveda, four approaches are used in the clinical practice for the treatment of immunodeficiency disorders- samsodhana, samsamana, rasayana and satwavachaya chikitsa.

Rasayana tantra is one of the eight clinical specialities. It refers to nutrition, natural resistance and geriatrics. It is termed as rasayana because they conduce to replenishment of rasa and other dhatus. Apparently rasayana means an improved state of nourishment, which in turn upholds increased immunity and youthfulness. Rasayana can be a drug, diet or even a lifestyle and conduct. Rasayana is supposed to strengthen ojas and Bala. It helps in promotion of memory, complexion, improves host resistance. Ayurveda addresses immunological up regulation primarily through the use of rasayana. For better rasayana effects, samsodhana therapy is always needed to achieve nutritional requirements of body cells.

MODE OF ACTION OF RASAYANADRUGS.

Rasayana drugs act by one of following 3 ways:

1. Acting at the level of rasa thus directly improving the quality of nutrition. Rasayana drugs having Madhuri, guru, snigdha and sheeta properties act at this level.
2. Acting at the level of Agni: by improving digestion and metabolism. Rasayana drugs having ushna, laghu, ruksa, Katy, thikta, kasaya rasa act at this level.
3. Acting at the level of srotas: By improving the micro circulation, it ensures proper perfusion, helpful in distribution of ojas to dhatus. Rasayana drugs which possess thikta, visada, ruksha, laghu, ushna act at this level.

Ayurveda makes use of both single herbs and compound formulation to improve and maintain body immunity. Some of important rasayana drugs are as follows:

1. *Tinospora cordifolia* (Gudoochi): used in management of jaundice, diabetes, skin diseases. It improves phagocytic action of macrophages.
2. *Embilica officianalis* (amalaki): rich source of vitamin C. used as antioxidants, antibacterial, antiinflammatory agent.
3. *Terminalia chebula* (Hareetaki): It is an antibacterial, antioxidant, antiinflammatory, immunomodulatory agent. used in prophylaxis of cytomegalovirus.
4. *Glycyrrhiza glabra* (yashtimadhu): increases leucocyte count, anti allergic, antioxidant, immunostimulant.
5. *Commiphora mugul* (guggulu): anti inflammatory, anti hyperlipidemic, and immunomodulatory agent.
6. *Allium sativum* (lshuna): It is an antimicrobial, antitumor, hypolipidemic, anti arthritic agent. Diallyl sulphide in allium is known to have anticarcinogenic agent.
7. Shilajatu (Asphalt): It activates macrophages and enhance cytokine release. It exhibits cytotoxic effect.
8. Chyawanaprash avaleha: contains amalaki. used in treatment of pulmonary tuberculosis, improves general immunity.

DISCUSSION

The immune system is an intricate system, linking network of biochemical mechanism. The main function of immune system is to protect one's body from foreign invaders such as bacteria, viruses, fungi or parasites collectively called pathogens. Aim of Ayurveda is to provide good health in

holistic ways by strengthening host defence against diseases. The concept of immune stimulation has been used successfully in ayurveda in immuno competent conditions like AIDS, TB, cancer. Rasayana therapy make it possible to improve immunity, health, longevity, regeneration of cells and tissues, optimise physical enhancement, enhances rehabilitation of muscles, bone etc. While comparing modern aspect, it performs the action of immunomodulators. By acting primarily on the immune system like the macrophages, the simple chemical of herb through activating the cytokine network could produce all the action. The immunomodulators action of rasayana brings alteration in status of immune system. The benefits of immunomodulators is their ability to stimulate natural and adaptive defence mechanism. The word rasayana means those that brings about proper uptake, growth and improvement of essential vital dhatus and ojas. Also rasayana drugs are rich source of antioxidants.

CONCLUSION

The main aim of Ayurveda is maintenance of health through dhatusamya. Rasayana works at various levels in the body and overall result is the absolute state of vyadhikshamatva. It emphasise on the improvement of ojas rather the cure and destruction of pathogen. Rasayana drugs are not only immunomodulators but also have other effects such as immune stimulation, antistress, antioxidant, enhancing cellular detoxification mechanism, repair damaged cells including cell proliferation. So rasayana drugs should be used as a compulsory measure for immune deficient disorders.

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