IMPORTANCE OF RASAYANA IN IMMUNE DEFICIENCY DISORDERS

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ABSTRACT

Immunodeficiency is a condition in which the 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 dhatu. 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, centalilla asiatica (mandukaparni), Tinospora cordifolia (Guduchi), Emblica officinalis (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 immune deficiency conditions. An immunocompromised 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, 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 rajayaksha, ojokshaya, aannipathia jwara, cause immune 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 aging and diseases. It is used in chronic and severe debility of the body secondary to major illness including cachexia associated with rajayaksha, 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 immunomodulatory 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. Leukocytes ep hagocytes, lymphocytes, bonemarrow, lymph nodes, tonsils, thymus, spleen are all 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 its 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 vyadhikshamatva. The resistance power of the body which prevents the development of disease is called immunity or vyadhikshamatva. Ayurveda conceives a unique concept of

KEY WORDS: Immune Deficiency, Immunomodulators, Ojas, Rasayana, Vyadhikshamatwa
using immunomodulators. It provides a conventional chemotherapeutic approach to pathogen by nonspecifically activating the immune system. The concept of immunomodulation emphasizes enhancing immune responsiveness of an organism against a pathogen.

IMMUNOMODULATORS
Immunomodulators are drugs that either suppress (immunosuppressants) or stimulate the immune system (immunostimulants). Examples for primary immunodeficiency disorders include:

1. X-linked agammaglobulinemia
2. Common variable immune deficiency
3. 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:

1. AIDS
2. Cancers of immune system like leukemia
3. Immune complex disorders like viral hepatitis
4. Multiple myeloma

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

Vyadhikshamatva in Ayurveda is also known as Bala which is of three types:
1. Sahana Bala: in the time of day, season, one’s age are important factors for enhancing immunity.
2. Yukthikta Bala: Bal is inherited which comes from parents. In kalaja Bala, the time of day, season, one’s age are important factors for enhancing immunity.
3. Ayurveda make use of both single herbs and compound formulation to improve and maintain body immunity.

MODE OF ACTION OF RASAYANA DRUGS
Rasayana drugs act by one of following 3 ways:
1. Acting at the level of rasa thus directly improving the quality of nutrition.
2. Acting at the level of Agni: by improving digestion and metabolism.
3. Acting at the level of srotas: By improving the microcirculation, it ensures proper perfusion, helpful in distribution of ojas to dhatu.

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

2. Emblica officinalis (amalaki): rich source of vitamin C, used as antioxidants, antibacterial, antiinflammatory agent.
3. Terminalia chebula (Haritaki): it is an antibacterial, antioxidant, antiinflammatory, immunomodulatory agent used in prophylaxis of cytomegalovirus.
5. Commiphora mukul (guggulu): it is an antiinflammatory agent.
6. Allium sativum (lahsun): It is a antibacterial, antitumour, antihypolipidemic, and immunomodulatory agent.

DISCUSSION
The immune system is an intricate system, linking network of biochemical mechanisms. 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, antioxidants, 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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