

## **A BRIEF REVIEW ON AYURVEDIC CONCEPT OF IMMUNITY AND IMMUNIZATION**

**Pravin Masram<sup>1\*</sup>, Suhas Chaudhary<sup>2</sup>, Patel KS<sup>3</sup>, Kori VK<sup>4</sup>, Rajagopala S<sup>5</sup>**

1. *Ph.D Scholar, Dept. of Kaumarbhritya, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.*
2. *MD Scholar, Dept. of Kaumarbhritya, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.*
3. *Professor & Head, Dept. of Kaumarbhritya, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, India.*
4. *Asst. Professor, Dept. of Kaumarbhritya, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.*
5. *Asst. Professor, Dept. of Kaumarbhritya, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.*

Received: 25-04-2014; Revised: 18-06-2014; Accepted: 25-07-2014

### **Abstract**

The word immunity means the state of protection from infectious disease. The immune system evolved as defense system to protect animals from invading microorganisms and malignant disorders. Immunology is a branch of biomedical science that covers the study of all aspects of the immune response in all organisms. The study of the molecular and cellular components that comprise the immune system, including their function and interaction, is the central science of immunology. Ayurvedic system of medicine not only deals with treating the diseases but also aims to prevention the disease. Vyadhikshamatva (Immunity) is described in Ayurveda and this concept is considered equivalent to immunity. Hence an attempt has been made to present Ayurvedic concepts of immunity and immunization.

**Key words:** Vyadhikshamatva; Bala; Agni; Rasayana; Lehana.

### **\*Address for correspondence:**

Dr. Pravin Masram,  
Ph.D. Scholar, Dept. of Kaumarbhritya,  
IPGT & RA, Gujarat Ayurved University,  
Jamnagar, Gujarat, India – 361008.  
E-mail: [pravinmasram15@gmail.com](mailto:pravinmasram15@gmail.com)

### *Cite This Article*

Pravin Masram, Suhas Chaudhary, Patel KS, Kori VK, Rajagopala S. A brief review on Ayurvedic concept of immunity and immunization. *Ayurpharm Int J Ayur Alli Sci.* 2014;3(8):230-240.

## INTRODUCTION

Charaka defined Ayus (life) as combination of the body, sense organs, mind and soul.<sup>[1]</sup> In other word, Ayurveda has given much priority to live healthy and joyful long life. Concepts related to health and diseases are discussed with detail in nearly all classical texts of Ayurveda. These concepts include knowledge of etiology, symptomology, therapeutics, various measures to maintain healthy status and reasons behind falling sick.<sup>[2]</sup>

Many people prone to disease due to breaking their dietary habit (Aharaja), change in climate, on the other hand, some people remain healthy in spite of breaking dietary rules or change in climate and do not get affected by any disease. Many micro-organisms enter the human body through air and water, but fail to create disease due to immune response present in the living body. The most important thing in relation to health and disease is immunity of the body. Concept of Vyadhikshamatva (Immunity) described in the classical texts of Ayurveda is similar to immunity. It is not exaggeration to mention that, Ayurveda described Vyadhikshamatva in more detail and magnificent way which can be considered equivalent to modern concepts of immunity. Till date some works have been found published on Ayurvedic concepts of Vyadhikshamatva, but there are some more detail has remained to be highlighted. Present work is aimed to fulfill this gap and will serve as a torch bearer in understanding immunity with Ayurvedic view.

### Concept of Vyadhikshamatva

In Sanskrita, the word Vyadhikshamatva' is made up of two words; Vyadhi (disease) and Kshamatva (suppress or overcome). According to Ayurveda, Vyadhi is conditions which come into existence as consequence of non-equilibrium between Doshas (physiological factors i.e vata, pitta & kapha), Dhatus (tissues systems) and Malas (excretory

products of body). These factors, in their normal status are responsible in maintaining the physical and psychological health. The other word, Kshamatva' is derived from, 'Kshamus sahane' which means to be patient or composed to suppress anger, to keep quite or to resist. Therefore Vyadhikshamatva means the factor which limits the pathogenesis and opposes the strength of disease.<sup>[3]</sup> Chakrapani Datta, while commenting on Charaka Samhita, gave his view on the term Vyadhikshamatva and explained the term in two divisions, viz:<sup>[4]</sup>

(I) Vyadhi-balavirodhitvam: It is the capacity to restrain or withstand the strength (severity) of the diseases i.e. strength to resist the progress of disease.

(II) Vyadhi-utpadakapratibandhakatva: The resisting power of the body competent enough to prevent the occurrence and re-occurrence of the disease.

These sub-types of Vyadhikshamatva commutatively form the resistance which now a day known as Immunity.

There are nine factors mentioned in Ayurveda which promotes body towards incapability to resist the disease manifestation i.e. factors responsible for decreasing immunity.<sup>[5]</sup>

- 1) Ati- Sthoola (Excessively obese persons)
- 2) Ati-Krishna (Excessively emaciated person)
- 3) Anivista-Mamsa (Individual having improper musculature)
- 4) Anivista-Asthi (persons having defective bone tissues)
- 5) Anivista-Shonita (persons with defective blood)
- 6) Durbala (Constantly weak person)
- 7) Asatmya-Aaharopachita (Those nourished with unwholesome food)
- 8) Alpa-Aaharopachita (Those taking diet in small quantity)
- 9) Alpa-Sattva (Individuals with feeble mind)

## **Relation of Vyadhikshamatva with various factors**

### **1. Sleshma**

Kapha is one of the Tridosha (three humors-Vata, Pitta and Kapha-which are said to be responsible for maintenance of homeostasis or equilibrium in the body), which possesses properties such as Snigdha (unctuousness), Sita (cold, producing coldness), Guru (heavy) Manda (slow in action), Slaksna (smooth), Mrtsna (slimy) and Sthira (stable/static).<sup>[6]</sup>

Sleshma in normal state considered as Bala and Oja while in abnormal state it is Mala (waste) and Papma (diseases)<sup>[7]</sup> Function of normal Kapha is like that of Ojas. Kapha in normal state provides compactness, stability, heaviness, virility, immunity, resistance, courage and gracelessness.<sup>[8]</sup>

### **2. Hita and Ahita food**

Some food substances are wholesome and suitable for the body as the body can inheritably transfer those substances into its own by virtue of Jatisatmya. These are called as Satmya or Hita substances. Water, ghee milk and rice are few examples of general wholesome food as these are completely suitable for every human. On the other contrary some substance do not suit to the body and cause some adverse reaction. These are known as Ahita or Asatmya substances. Fire-burns, alkalis-cauterize, toxin-kills these are the examples of Ahita substance. There are three reasons seen for the ill-effects being present in Ahita substance i.e. natural inherent feature, physical or chemical combination and refinement.<sup>[9]</sup>

### **Hita, Ahita Substance and Vyadhikshamatva**

Hita ahara is responsible to developed healthy Dhatus and final product of Dhatus i.e. Ojus. So increases in Ojus or Bala ultimately

increase Vyadhikshmatva. On the other hand, Ahita substance if taken continuously then leads to improper nourishment of Dhatus which result in decreasing Ojus and Vyadhikshmatva.

### **3. Relation of Bala and Vyadhikshamatva**

Health of an individual depends upon good strength of the body tissues. It is difficult to treat the disease occurred in one whose body strength is low<sup>[10]</sup> and hence Acharya Charaka prefers the Bala (strength) examination of an individual before starting the treatment.

Acharya Sushruta mentioned that the final and excellent essence of Dhatus begins with Rasa to Shukra is Ojus and this Ojus is said to be Bala. Dalhana has commented on this as Ojus is the cause for predominance of Bala of whole body.<sup>[11]</sup> Acharya Vagbhata also supported view of Acharya Sushruta and mentioned similar concept which clearly indicates the close relation between Oja and Vyadhikshamatva.<sup>[12]</sup>

### **Types of Bala**

It is of three types Sahaja (constitutional), Kalaja (temporal) and Yuktikrutajabala (acquired).<sup>[13]</sup>

### **Sahaja Bala**

Constitutional strength is the one which exists in the mind and body from the very birth.

### **Kalaja Bala**

Temporal strength is the one which is based on division of seasons and age of the person. In Adana kala (late winter, spring and summers) Bala of individual will be less and in Visarga kala (rainy seasons, autumn and winter) it will be more. Bala will be Alpa (minimum) in child and old age, Uttama (maximum) in young age.

## **Yuktikrutaja Bala**

Acquired strength is the one which is achieved by the combination of diet and physical activities.

### **Factors responsible for promotion of strength**

There are 12 factors responsible for increasing Bala (strength) of the body.<sup>[14]</sup>

1. Birth in a country where people are naturally strong.
2. Birth at a time when people naturally gain strength i.e. Hemanta (November to January) and Shisira (January to March)
3. Favorable deposition of time (pleasant and moderate climate)
4. Excellence in the qualities of seed i.e. sperm and ovum, and Asaya i.e. proper anatomical and physiological status of uterus of mother
5. Excellence of the ingested food
6. Excellence of the physique
7. Excellence of the Satmya (wholesomeness of various factors responsible for maintenance of the body)
8. Excellence of the mind
9. Favorable deposition of the nature
10. Young age of both the parents i.e. they should not be over aged
11. Habitual performance of exercise
12. Cheerful disposition and immense love for each other.

The individuals possessing most of these factors are naturally immune i.e. *Vyadhikshamatva* for diseases.

### **4. Relation between Agni (food assimilation power of body) and Vyadhikshama**

Acharya Charaka in the context of functions of Agni narrated that, Dehagni or Jatharagni (digestive power of stomach) is responsible

for life, color (luster of the skin), strength, health, enthusiasm, plumpness, complexion, Ojas (energy), Tejas (gleam of the body), other varieties of Agni and Prana (vitality). Extinction of this Jatharagni leads to death. Its proper maintenance helps a person to live a long life and its impairment gives rise to diseases. Therefore Jatharagni is considered to be the root or the most important sustaining factor of living beings.<sup>[15]</sup>

In this way immunity is influenced by the power of Agni, digestive fire and our ability to digest, assimilate and absorb nutrients in human bodies. In a healthy, strong and immune body, invaders get neutralized or destroyed and expelled out of body. If Agni is impaired by an imbalance within, the Tridosha then metabolism will get affected, immune response and natural resistance will also be lowered.

### **5. Relation between Oja and Vyadhikshamatva**

According to Acharya Charaka, oja appeared foremost in the human body during embryogenesis.<sup>[16]</sup> The essence of Saptadhatus (seven bodily tissues as from Rasa to Shukra Dhatu), i.e. Rasa (plasma and lymph), Rakta (blood cells), Mansa (connective and muscular tissue), Meda (body fats e.g. adipose tissue), Asthi (bones), Majja (bone marrow) and Shukra (reproductive systems) is called Oja and it is the seat for strength, hence called Bala.<sup>[17]</sup> Ojas is Sara (essence) of Dhatus ending with Sukra; though located in the heart, it pervades all over body and control the working of the body. It is viscous, unctuous, greasy, Somatmaka (preponderant in watery principal), clear (transparent) and slight reddish yellow in color. By its loss (destruction, absence) death will occur and by its presence the body (and life) sure to survive. Oja is the reason for different condition and activities related with the body.<sup>[18]</sup>

### Ojakshaya (decrease or loss of Ojas)

Ojas undergoes decrease (in quantity) by anger, hunger, worry, grief and exertion. With such decrease, the person becomes fretful, debilitated, worries much again (without apparent reason), feels discomfort in the sense organ, develop bad complexion, bad mention and dryness of skin.<sup>[19]</sup>

### 6. Rasayana (Rejuvenation therapy) and Vyadhikshamatva

Rasayana means the way for attaining excellence in all body tissue through some special measures and medicines.<sup>[20]</sup> Rasayana therapy is one of eight major specialties of Ayurveda. The concepts of immunity and immunomodulation are extensively explored and used in Ayurveda, particularly in the form of Rasayana therapy.<sup>[21]</sup> According to Ayurveda, Rasayana helps in strengthening Oja, Bala and thus increases Vyadhikshamatva.

#### Benefits of Rasayana therapy

Long life (good), memory, great intelligence, perfect health, youthfulness, bright complexion and color bold voice and magnanimity, increase strength, of the body and sense organ, perfection in speech, sexual power and brilliance are all obtained from proper Rasayana therapy.<sup>[22]</sup>

#### Classification of Rasayana<sup>[23]</sup>

##### According to method of use

- 1) Kutipravesika Rasayana (indoor Regimen)
- 2) Vatatapika Rasayana (outdoor Regimen)

##### According to purpose

- 1) Aajasrika Rasayana (promoter of health by some drug regimen and can be consumed in all conditions)

- 2) Naimittika Rasayana (promoter of specific vitality in specific disease)
- 3) Kamyas Rasayana (promoter of health in specific way in normal individual)

### Concept of improving Vyadhikshamatva (Immunization)

The following are looking to be the immunization measures in Ayurveda.

1. Rasayana
2. Lehana (Lickables or Electuaries)

Taking Rasayana is helpful to increase the immunity of the person to keep him away from opportunistic diseases. The possible mechanisms by which action of Rasayana can be interpreted with modern aspects are; nutritive function, immunomodulatory action, antioxidant action, anti-aging effect, neuro-protective action, haemopoietic effect etc. In recent years numerous researches have been done to explore Ayurvedic treasure for benefit of common people to improve health by using different Ayurvedic drugs. Some examples are:

1. Immunostimulatory effect of *Curculigo orchioides* Gaertn.<sup>[24]</sup>
2. Macrophage activation property of *Tinospora cordifolia* Willd.<sup>[25]</sup>
3. Effect of some Indian herbs (*Asparagus racemosus* Willd., *Tinospora cordifolia* Willd., *Withania somnifera* Daul and *Picrorhiza kurroa* Royle ex Benth.) on macrophage functions in mice.<sup>[26]</sup>
4. Immunoprotection by *Withania somnifera* Dunal, *Tinospora cordifolia* Willd. and *Asparagus racemosus* Willd. during cancer chemotherapy.<sup>[27]</sup>
5. Immunopotentiating property of *Tinospora cordifolia* Willd.<sup>[28]</sup>
6. Augmentation of non-specific immunity by gold preparations.<sup>[29]</sup>
7. Anti-cataleptic, anti-anxiety and anti-depressant activity of gold.<sup>[30]</sup>

8. Antioxidant activity of *Momardica charantia* Linn, *Glycyrrhiza glabra* L, *Acacia catechu* Willd. And *Terminalia chebula* Retz.<sup>[31]</sup>
9. Antioxidative effect of *triphala* (combination of *Terminalia chebula* Retz, *Terminalia bellerica* Roxb. and *Emblica officinalis* Gaertn)<sup>[32]</sup>
10. Antibacterial activities of *Emblica officinalis* Gaertn. and *Coriandrum sativum* L.<sup>[33]</sup>
11. Antifungal activity of *Curcuma longa* L.<sup>[34]</sup>
12. *Haridradi Ghrita* (Polyherbal medicated *ghruta*) shows the Immunomodulatory activity (preferential stimulation of the components of cell-mediated immunity) in rats during a trail.<sup>[35]</sup>
13. Immunomodulatory activity of *Triphala* (combination of fruit pulp of *Terminalia chebula* Retz, *Terminalia bellerica* Roxb. and *Emblica officinalis* Gaertn).<sup>[36]</sup>
14. Antioxidant activity of tannoid principles of *Emblica officinalis* Gaertn. (Amalaki).<sup>[37]</sup>
15. Anti-oxidant effect of *Withania somnifera* Dunal. glycowithanolides in rat.<sup>[38]</sup>

There are number of such studies through which Ayurvedic single or multiple formulations tested by experimental studies on albino mice/rats etc. or reported the beneficial effect of human trails, So these studies reveals that there are wide range of possibilities improving immunity and treatment in various disease.

### The selection of Rasayana

According to need, Rasayana drugs can be administered by considering various factors such as Age, Dhatu Deha Prakruti, Kala, Disease,<sup>[39]</sup> to enhance memory.<sup>[40]</sup> And Srotas,<sup>[41]</sup> (Table 1 to 7) Medhya Rasayana

drugs are life-promoting, disease-alleviating, promoters of strength, and power of intellect.

### Level of action of Rasayana drugs

Rasayana act at three levels such as at the level of Poshaka Rasa (increases nutrition), at the level of Agni (increases digestion and assimilation of food) and at the level of Srotas (increases absorption of food from serum to various parts of body)<sup>[41]</sup>

### Lehana

In Ayurvedic texts, various Acharays have described countless useful formulations and mode of conduct for children. Acharya Kashyapa describes a special formulation by the name of "Lehana".<sup>[42]</sup>

The facts stated about Lehana are as under –

### Purposes of Lehana

1. To enhances growth & development by providing sufficient nutrition.
2. Promote health, complexion and strength (immunity).
3. Protect from various infections along with improving intellect and speech (delayed milestone).

### Indication of Lehana

The children of a mother who are having no breast milk, deficient milk, or vitiated milk of parturient women (mother) or of a wet –nurse of similar condition who have predominance of Vata and Pitta but not Kapha, who do not get satisfied with the breast milk and cry inspite of repeated sucking, children who do not sleep at night, eat too much, pass scanty urine and feces; children who have increased digestive power, though free from disease yet scraggy, have delicate body part and emaciated, do not pass urine and feces even for three days; such type of children should be prescribed lehana ( electuaries).<sup>[43]</sup>

**Table 1: Rasayana drugs according to age**

Decade of life (In years)	Loss of impact	Desirable Rasayanas
1-10	Balya	Vacha, Svarna
11-20	Vruddhi	Kashmari, Bala
21-30	Chhavi	Aamalaki, Lauha
31-40	Medha	Shankhapushpi
41-50	Twak	Jyotishmati
51-60	Drushti	Jyotishmati
61-70	Shukra	Aatmagupta, Ashwagandha
71-80	Vikrama	Aamalaki, Bala
81-90	Buddhi	Brahmi
91-100	Karmendriya	Bala Rasayana

**Table 2: Rasayana according to Dhatu**

Rasa	Draksha, Kharjura, Kashmari
Rakta	Aamalaki, Palandu, Lauha
Mamsa	Haritaki, Guggulu, Guduchi
Meda	Laksha, Shukti, Shankha
Asthi	Aswagandha, Bala
Majja	Lauha, Majja, Vasa
Shukra	Aatmagupta, Pippali, Nagabala

**Table 3: Rasayana according to Deha Prakruti**

Dosha	Rasayana dravyas
Vatika	Bala, Ghrita
Paittika	Aamalaki, Shatavari
Shleshmika	Bhallataka, Guggulu, Pippali

**Table 4: Rasayana according to Kala**

Kala	Rasayana dravyas
Aadana Kala	Shita Virya – Laghu Guna- Aamalaki
Visarga Kala	Ushna Virya – Guru Guna – Bhallataka

**Table 5: Rasayana according to Disease**

Diseases	Rasayana dravyas
Prameha	Shilajatu, Haridra, Aamalaki
Aamavata	Bhallataka
Medoroga	Guggulu, Haritaki
Shvasa	Bhallataka
Kushtha	Tuvaraka
Pandu	Lauha
Manasaroga	Medhya Rasayana

**Table 6: Medhya Rasayana (Nootropics drugs)**

Drug	Part use
Mandukaparni	Swarasa (juice)
Yashtimadhu	Churna (powder)
Guduchi	Swarasa (juice)
Shankhapushpi	Kalka (paste)

**Table 7: Rasayana according to Srotas**

Srotas	Rasatana dravyas
Pranavaha Srotas	Pippali, Bhallataka, Aamalaki, Maricha, Kasturi
Udakavaha Srotas	Panchakola, Kapardika, Shankha bhasma, Hingu, Nagakeshar
Rasavaha Srotas	Kharjura Manth, Laja Manda, Guduchi
Raktavaha Srotas	Loha bhasma, Go-Ghrita, Gorochana, Kushthaghna dravya
Mamsavaha Srotas	Karaskar, Svarna bhasma
Medovaha Srotas	Guggulu, Shilajatu, Kumbha
Asthivaha Srotas	Aabha
Majjavaha Srotas	Vacha, Markava, Raupya bhasma
Sukravaha srotas	Cow milk, vang bhasma
Mutravaha Srotas	Shilajatu, Gokshura, Punarnava
Purishvaha srotas	Kutaj, Bilwa, Haritaki
Swedavah srotas	Vang bhasma

### Contraindications of Lehana

Conditions such as children having poor digestive power, sleepy, passing excessive (in quantity and number) amounts of urine and stool, have indigestion, receive Guru (heavy) breast milk, the mother consuming all Rasas, suffer from disease of head and neck, in Amaroga (disease of metabolism), fever, diarrhea, Shotha (edema), jaundice, anemia, cardiac disease, dyspnea, cough, disease of rectum, urinary bladder and abdomen, flatulence, Ganda (enlarged thyroid), erysipelas, vomiting, anorexia, all Graha disease and Alasaka should not be prescribed lehana. Various compound and formulations for lehana mentioned by Acharyas to increase digestive and metabolic power, strength is summarized below in brief:<sup>[43]</sup>

#### A. Acharya Kashyapa

1. Svaran Prasana - Pure gold (in small quantity) is rubbed in water on a clean stone and given with honey and Ghrita, be given to child for licking. Licking of gold increase intellect, digestive power and metabolic power, strength, gives long life, is auspicious, virtuous, aphrodisiac, increase complexion and elimination the (evil effect of) Graha.<sup>[43]</sup>
2. Samvardhan ghrit
3. Brahmi ghrita

#### B. Acharya Charaka

1. Panchagavya ghrita<sup>[44]</sup> (Ghrita means clarified butter made from cow's milk)
2. Brahmi ghrita<sup>[45]</sup>
3. Kalyanaka ghrit<sup>[46]</sup>

#### C. Acharya Sushruta

Sushruta has mentioned 4 recipes (containing gold) which provide general immunity, body resistance, helpful in growth and development and enhancing the intelligence.<sup>[47]</sup> These are:

1. Svarna bhasm with Kustha (*Saussurea lappa* C.B,Clarke), Vacha (*Acorus calamus* Linn), Madhu (honey) & ghee.
2. Svarna bhasm with paste of Brahmi (*Bacopa monnieri* Linn), Sankhapuspi (*Convolvulus puricaulis* Chois.), with honey & ghee.
3. Svarna bhasm, Arkpushpi (*Holostemma annularium* Roxb.), Vacha (*Acorus calamus* Linn), honey & ghee.
4. Svarna bhasm, Khaidarya (*Murraya koenigii* Linn), Sweta Durva (*Cynodon dactylon* Linn.) ghee.

#### D. Acharya Vagbhata

1. Ashtanga ghrita
2. Sarshvata ghrita



3. Vachadi ghrita
4. Combination of gold
  - a) Svarna (Gold), Vacha (*Acorus Calamus* Linn ), Kushta (*Saussurea lappa* C.B.Clarke)
  - b) Svarna (Gold), Arkapushpi (*Holostemma annularium* Roxb.)
  - c) Svarna (Gold), Matsyakhyaka (*Alternanthera sessilis* Linn.), Shankhapushpi (*Convolvulus pluricaulis* Chois.)
  - d) Svarna (Gold), Kaidarya (*Murraya koenigii* Linn), Vacha (*Acorus Calamus* Linn.)<sup>[48]</sup>

## DISCUSSION

Vyadhikshamatva - resistance to diseases or immunity against diseases is of two kinds i.e. the one which attenuate the manifested disease and other variety prevents the manifestation of diseases. Sleshma in normal state considered as Bala and Oja and function of normal Kapha like that of Ojas. Agni (food assimilation power of body) is important for proper digestion of diet. Proper nourishment of Dhatus will be depends on wholesome and unwholesome food. Doshas are vitiated due to continue taking unwholesome food ultimately production of excellent essence of Dhatus i.e Ojas is not done. Final and excellent essence of Dhatus beginning with Rasa to Shukra is Ojus and that Ojus is said to be Bala. The concept of Vyadhikshamatva is related with Kapha, Bala, Agni and Ojas. Ayurvedic Rasayana therapy in light of the concepts of modern immunology, particularly the immunomodulation will be quite rewarding. Many research works on the Rasarana drugs are effective in improving immunity and prevent the disease as antibacterial and antifungal. Lehana is also helpful for the strength, intelligence and ultimately improve the immunity. Such attempts might bring about much needed integration of traditional Indian Ayurveda and modern scientific medicine and help in the development of a holistic approach towards human health.

## CONCLUSION

Ayurvedic concept of Vyadhikshamatva is simillar as normal condition of the Kapha, Bala and Oja. Oja is final and excellence of the product Dhatu and Vyadhikshamatva depends on it. Production of excellence of Dhatu depends on the Hita and Ahita Ahara and Agni. Rasayana therapy help in produce excellence Dhatu and lastly it convert into Oja, ultimetally increase in Oja and similarly increase in immunity. Many researches proved immunomodulatory effect of drugs which are used in Rasayana therapy. Medhya Rasayana (Nootropics drugs) is life-promoting, disease-alleviating, promoters of strength, Agni, complexion, voice and intellect-promoting. Lehana will be also helpful in the improve immunity. Hence, for attaining good Vyadhikshamatva, we should use various regimens and follow conducts as described in Ayurvedic texts for the same.

## REFERENCES

1. Charaka. Charaka Samhita, Part 1. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Sutrasthana, 1/42. p.6.
2. Charaka. Charaka Samhita, Part 1. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Sutrasthana, 1/42. p.4.
3. Sharma MK. Concept of vyadhikshamatva (immunity) and its relationship with Bala (Vital strength). Global J Res. Med. Plants & Indigen. Med. 2013;2(5):386–391.
4. Charaka. Charaka Samhita (Ayurveda Dipika Commentary by Chakrapanidatta) Yadavaji Trikamji, editor. 1<sup>st</sup> ed. Varanasi: Chaukhambha Surbharti Prakashana; 2014. Sutrasthana, 28. p.178.
5. Sharma MK. Concept of vyadhikshamatva (immunity) and its relationship with Bala (Vital strength). Global J Res. Med. Plants & Indigen. Med. 2013;2(5):386–391.
6. Vagbhata. Astanga Hridayam. Murtthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Sutrasthana, 1. p.8-9.
7. Charaka. Charaka Samhita (Vidyotini Hindi commentary), Part-I. Kashinatha Shastri, Gorakha Natha Chaturvedi, editors. 1<sup>st</sup> ed. Varanasi: Chaukhambha Bharati Academy; 2005. Sutrasthana, 17/117. p.366.

8. Charaka. Charaka Samhita (Vidyotini Hindi commentary), Part-I. Kashinatha Shastri, Gorakha Natha Chaturvedi, editors. 1<sup>st</sup> ed. Varanasi: Chaukhambha Bharati Academy; 2005. Sutrasthana, 17/117. p.385.
9. Sastri VLN. Kaumarabhritiyam. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2009. p. 131.
10. Patil SB, Chowdhury K, Rao MV. Vyadhikshamatva - An Ayurvedic aspect of immunity. Pharma Science Monitor, 2013;4(4S1):32-42.
11. Sushruta. Susurta Samhita (Ayurveda tatvasandipika Hindi commentary), Part - 1. Shastri A, editor. 1<sup>st</sup> ed. Varanasi: Choukhambha Sanskrit Sansthan; 2011. Sutrasthana, 15/30, p.80.
12. Vagbhata. Ashtanga hridayam, Part 1. Murthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Sutrasthana, 11/41. p.164.
13. Charaka. Charaka Samhita. Sharma RK, editor. 1<sup>st</sup> ed. Varanasi: Choukhambha Sanskrit Series; 2002. Sutrasthana, 11/36. p. 220.
14. Charaka. Charaka Samhita. Sharma RK , editor. 1<sup>st</sup> ed. Varanasi: Choukhambha Sanskrit Series; 2002. Sharira sthana, 6/13. p. 436.
15. Charaka. Charaka Samhita (Vaidya manorama Hindi commentary). Shukla V, Tripathi R, editors. 1<sup>st</sup> ed. New Delhi: Choukhambha Sanskrit Publication; 2010. Chikitsasthana, 15/3-4. p.358.
16. Charaka. Charaka Samhita (Vaidya manorama Hindi commentary). Shukla V, Tripathi R, editors. 1<sup>st</sup> ed. New Delhi: Choukhambha Sanskrit publication; 2010. Sutrasthana, 17/75.p.267.
17. Sushruta. Sushruta Samhita ( Ayurveda tatva sandipika Hindi Commentary). Shastri A, editor. 1<sup>st</sup> ed. Varanasi: Choukhambha Sanskrit Publication; 2011. Sutrasthana, 15/24.p.79.
18. Vagbhata. Astanga Hridayam. Murthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Sutrasthana, 11/37-38. p.163-164.
19. Vagbhata. Astanga Hridayam. Murthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Sutrasthana, 11/39-40. p.164.
20. Charaka. Charaka Samhita, Part 2. Sharma PV, editor. Varanasi: Chaukhamba Orientalia; 2011. Chikistasthana, 1/8. p.4.
21. Misra SK. Immunomodulation: An Ayurvedic Perspective. International Ayurved Conference – 1997. (Ayurved – Modern Medicine Interface for Futurist Medicine) Lucknow: Sanjay Gandhi Post-Graduate Institute of Medical Sciences; (Abstract). p.12.
22. Vagbhata. Astanga Hridayam. Murthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Uttara Sthana, 39/1-2. p.381.
23. Charaka. Charaka Samhita, Part-II (Vidyotini Hindi commentary). Shastri KN, Chaturvedi GN, editors. 1<sup>st</sup> ed. Varanasi: Chaukhambha Bharati Academy; 1998. Chikistasthana. p.1-64.
24. Bafna AR, Mishra SH. Immunostimulatory effect of menthol extract of *Curculigo orchioides* on immunosuppressed mice. J Ethanopharmacol 2006;104:1-4.
25. Raveendran Nair PK, Steven J. Melnick, Reshma Ramchandran, Escalon E, Ramachandran C. Mechanism of macrophage activation by (1, 4)- $\alpha$ -glucan isolated from *Tinospora cordifolia*. International Immunopharmacology 2006;6:1815-1824.
26. Dhuley JN. Effect of some Indian herbs on macrophage functions in ochratoxin A treated mice. J Ethanopharmacol 1997;58:15-20.
27. Sham Diwanay, Deepa Chitre, Bhushan Patwardhan. Immunoprotection by botanical drugs in cancer chemotherapy. J Ethanopharmacol 2004;90:49-55.
28. Keppel, Sharma S. Immunopotentiating compounds from *Tinospora cordifolia*. J Ethnopharmacol 1997;58:89-95.
29. Bajaj S, Ahmed I, Raisuddin S, Vohara SB. Augumentation of non-specific immunity in mice by gold preparation used in traditional systems of medicine. Indian J Med Res. 2001;113:192-6.
30. Sonia Bajaj, Vohora SB. Anti-catalytic, anti-anxiety and anti-depressant activity of gold preparations used in Indian systems of medicine. Indian Journal of Pharmacology 2000;32:339-346.
31. Naik GH, Priyadarsni KI, Satav JG, Banavalikar MM, Sohoni DP, Biyani MK, Mohan H. Comparative antioxidant activity of individual herbal components used in Ayurvedic medicines. Phytochemistry 2003;63:97-104.
32. Srikumar R, Jeya Parthasarathy N, Manikandan S, Sathya Narayanan G, Sheeladevi R. Effect of Triphala on oxidative stress and on cell-mediated immune response against noise stress in rats. Mol Cell Biochem. 2006;283:67-74.
33. Sabahat saeed, Perween tariq. Antibacterial activities of *Emblica officinalis* and *Coriandrum sativum* against gram negative urinary pathogens. Pak. J. Bot. 2007; 39:913-917.

34. Amphawan Apisariyakul, Nongnuch Vanittanakom, Duang Buddhasukh. Antifungal activity of turmeric oil extracted from *Curcuma longa* (Zingiberaceae). J Ethnopharmacol 1995;49:163-169.
35. Fulzele SV, Satturwar PM, Joshi SB, Dorle AK. Study of the immunomodulatory activity of Haridradi Ghrita in rats. Indian Journal of Pharmacology 2003;35:51-54.
36. Ramasundaram Srikumar, Narayanaperumal, Jeya Parthasarathy, Rathinasamy Sheela Devi. Immunomodulatory Activity of Triphala on neutrophil functions. Biol. Pharm. Bull. 2005;28(8):1398-1403
37. Bhattacharya A, Ghosal S, Bhattacharya SK. Antioxidant activity of tannoid principles of *Emblica officinalis* (amla) in chronic stress induced changes in rat brain. Indian J Exp Biol. 2000;38 (9):877-80.
38. Bhattacharya A, Ghosal S, Bhattacharya SK: Anti-oxidant effect of *Withania somnifera* glycowithanolides in chronic foot shock stress-induced perturbations of oxidative free radical scavenging enzymes and lipid peroxidation in rat frontal cortex and striatum. J Ethnopharmacol 2001;74(1):1-6.
39. Singh RH. Rasayan and Vajikaran - Swashtyavritta Vigyan. 1<sup>st</sup> ed. New Delhi: Chaukhambha Sanskrit Pratisthan; 2007.p.88-96.
40. Charaka. Charaka Samhita, Part 2. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Chikistasthana, 1.3/30-31. p. 23.
41. Joshi YG. Kayachikista. 4<sup>th</sup> ed. Pune: Pune Sahitya Vitaran; 2001. p.35-60.
42. Devendranath Mishra. Kaurmarbhritya abhinav Balaswastha chikista Vigyan. 1<sup>st</sup> ed. Varanasi: Chaukhanbha Surbharti Prakashan; 2010.p.144.
43. Kashyapa. Kashyapa Samhita. Tewari PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhambha Viswabharati; 2008. Sutrasthana. p.5-8.
44. Charaka. Charaka Samhita, Part 1. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Chikista Sthana, 10/16 - 17.p.173.
45. Charaka. Charaka Samhita, Part 1. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Chikista Sthana, 10/25. p174.
46. Charaka. Charaka Samhita, Part 1. Sharma PV, editor. 1<sup>st</sup> ed. Varanasi: Chaukhamba Orientalia; 2011. Chikista Sthana, 9/34-41.p.165.
47. Sushruta. Sushruta Samhita. Singhal GD, editor. 2<sup>nd</sup> ed. Delhi: Chaukhambha Sanskrit Pratishtha; 2007. Sharirsthana, 10/68-70. p.134.
48. Vagbhata. Astanga Hridayam. Murtthy KRS, editor. 9<sup>th</sup> ed. Varanasi: Choukhambha Krishnadas Academy; 2013. Uttara Sthana, 1/43-44 p.11-12.

Source of Support: Nil

Conflict of Interest: None Declared