

## THE VYADHIKSHAMATVA: A REVIEW ON AYURVEDIC CONCEPT OF IMMUNITY

Dr. Laxmikant G. Thakare<sup>1\*</sup>, Dr. Dattatrya G. Parde<sup>2</sup> and Dr. Vidya S. Ingole<sup>3</sup>

<sup>1</sup>PG Scholar, Department of Kaumarbhritya, Bhausaheb Mulak Ayurved Mahavidyalay  
Nagpur, M.S.- 413501.

<sup>2</sup>PG Scholar, Department of Kaumarbhritya, Bhausaheb Mulak Ayurved Mahavidyalay  
Nagpur, M.S.- 413501.

<sup>3</sup>Hod & Professor Department of Kaumarbhritya Tantra, Bhausaheb Mulak Ayurved  
Mahavidyalay Nagpur M.S. - 413501.

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### \*Corresponding Author

**Dr. Laxmikant G. Thakare**

PG Scholar, Department of  
Kaumarbhritya, Bhausaheb  
Mulak Ayurved  
Mahavidyalay Nagpur,  
M.S.- 413501.

### ABSTRACT

In Ayurveda, the superior vital essence of all body tissues is called as Ojas, which is responsible for the defense of human body against diseases and infirmity. The term immunity capitalizes the state of defense from contagious disease. Immunology is a branch of biomedical science, which 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. Ayurveda the immunity is explained very briefly under the term Vyadhikshamatva. Many Acharya, and their commenters had specified various factors in ayurvedic text like Sleshma, Bala, Ojas,

Hita and Ahita Aahar(food), Agni, Rasayana, etc. which develop the Vadhikshamatva. This review article is an effort to present Ayurvedic concepts of immunity and immunization.

**KEYWORDS:** body tissues; Sleshma, Bala, Ojas,; concepts of immunity and immunization, Lehana.

### INTRODUCTION

According to Charaka Acharya stated that the Ayus (life) is the combination of the body, sense organs, mind and soul.<sup>[1]</sup> In other word, The healthy and joyful long life is the main priority of Ayurveda. Almost all classical manuscripts of Ayurveda explained the concepts

related to health and diseases in details, also the knowledge of etiology, symptomology, therapeutics, numerous methods to sustain healthy status and causes behind falling sick.<sup>[2]</sup> Numerous individuals vulnerable to disease due to breaking their dietary habit (Aharaja), change in environment, on the other hand, some individuals stay healthy in spite of breaking dietary rules or change in environment and do not get susceptible to any disease. Various types of microorganisms are move in the human body via air and water, but fail to produce illness due to immune response present in the living body. The most imperative thing related to health and disease is immunity of the body. The concept of Vyadhikshamatva (Immunity) defined in the classical manuscripts of Ayurveda is alike to immunity. Now days some works have been found published on Ayurvedic concepts of Vyadhikshamatva, but there are some more aspect has remained to be highlighted. This work is designed to accomplish this gap and will help as a torch bearer in understanding immunity with Ayurvedic view. The Vyadhikshamatva is a Sanskrita word, which is made up of two words i.e. Vyadhi (disease) and Kshamatva (suppress or overcome). As Ayurveda stated that, Vyadhi is the situations where non-equilibrium between Doshas (physiological factors i.e vata, pitta & kapha), Dhatus (tissues systems) and Malas (excretory products of body). And the normal state of Tridosh (physiological factors i.e vata, pitta & kapha), is responsible in maintaining the physical and psychological health. The other word, Kshamatva“ is derivative of “Kshamus sahanē” which means to be patient or composed to suppress anger, to keep quite or to resist. Hence Vyadhikshamatwa means the factor which restrict the pathogenesis and suppress the power of disease.<sup>[3]</sup> Chakrapani Datta, a commentor of Charaka Samhita, stated the term Vyadhikshamatva and give brief explanation in two divisions, i.e.<sup>[4]</sup>

(a) Vyadhi-balavirodhitvam: It is the capacity to put away or resist the power (severity) of the diseases i.e. power to resist the development of disease.

(b) Vyadhi-utpadakpratibandhakatva: The counterattacking strength of the body to inhibit the occurrence and re-occurrence of the disease.

These sub-types of Vyadhikshamatva combine to form the resistance against many types of diseases, which known as Immunity.

There are around nine types of factors which are mentioned in Ayurveda, encourages body towards inability to resist the disease appearance i.e. factors accountable for reducing the 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)

## MATERIALS AND METHODS

The material were collected from the classical Ayurvedic literatures, magazines and research journals.

### Numerous factors Related to Vyadhikshamatva

#### 1. The role of Sleshma in Vyadhikshamatva

The Kapha is one of the Tridosha (three humors Vata, Pitta and Kapha-which are said to be responsible for conservation of homeostasis or equilibrium in the body), which retains the properties (Guna) 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>

The normal phase of sleshma is called as Bala and Oja and abnormal phase is called as Mala (waste) and Papma (diseases)<sup>[7]</sup> Kapha in normal state function as that of Ojas. Kapha in normal state offers compactness (solidity), stability (constancy), heaviness, virility, immunity, resistance, courage and gracelessness.<sup>[8]</sup>

#### 2. Hita and Ahita Ahara (food)

Selected food materials are healthful and fit for the body as the body can inheritably allocate those materials into its own by virtue of Jatisatmya. Which are called as Satmya or Hita materials. Water, ghee, milk and rice are few samples of general healthful food as these are entirely suitable for all human. On other hand particular material do not suit to the body and give rise to so many adverse reaction. Which are known as Ahita or Asatmya materials. Fire-burns, alkalis-cauterize, toxin-kills these are the examples of Ahita substance. There are three causes told for the ill-effects actuality present in Ahita ahara material i.e. natural innate feature, physical or chemical combination and modification.<sup>[9]</sup> Hita, Ahita Substance and Vyadhikshamatva Hita ahara is accountable for the development of healthy Dhatus and final

product of Dhatus i.e. Ojus. So increases in Ojus or Bala ultimately increase Vyadhikshmatva. On the other side, Ahita ahara substance if taken continuously, it leads to inappropriate nourishment of Dhatus which result in decreasing Ojus and Vyadhikshmatva.

### 3. The role of Bala in Vyadhikshamatva

The Health of an individual rest on good power of the body tissues. If power of body of an individual is low, It is difficult to treat the disease occurred in such individual.<sup>[10]</sup> so that Acharya Charaka prefers the Bala (strength) examination of an individual previously to start the treatment.

Acharya Sushruta stated that the ending and superb core of all Dhatus begins with Rasa to Shukra is Ojas and this Ojus is called as Bala. Dalhana has commented on this as Ojus is the cause for predominance of Bala of whole body.<sup>[11]</sup> Acharya Vagbhata also accepted the opinion of Acharya Sushruta and stated parallel theory which undoubtedly specifies the relation between Ojas and Vyadhikshamatva.<sup>[12]</sup>

#### Types of Bala

There are three types of Bala i.e (a) Sahaja (constitutional), (b) Kalaja (temporal) and (c) 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 Bala (strength)

There are 12 factors responsible for growing 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.

Those individuals having most of above factors, they are naturally invulnerable i.e. Vyadhikshamatva for diseases.

#### **4. The role of Agni (food assimilation power of body) in Vyadhikshama**

Acharya Charaka stated that the Agni i.e. Dehagni or Jatharagni (digestive power of stomach) only is responsible for lifespan, color (luster of the skin), strength, health, enthusiasm, plumpness, complexion, Ojas (energy), Tejas (gleam of the body), other varieties of Agni and Prana (vitality). Termination of this Jatharagni is the indication of death an individual. If jatharagni working properly, then a person may live a long life and disease free life. its deterioration may arise various 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 predisposed by the strength 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 weakened by an disproportion within, the Tridosha then metabolism will get affected, immune response and natural resistance will also be let down.

## 5. The role of Oja in Vyadhikshamatva

Acharya Charaka stated that, the foremost presence of oja in the human body is during time of 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 origine of strength, hence called Bala.<sup>[17]</sup> Ojas is Sara (essence) of Dhatus ending with Sukra; through situated in the heart, it diffuses to all over the body and control the functioning of the body. It is viscous, unctuous, greasy, Somatmaka (preponderant in watery principal), clear (transparent) and slight reddish yellow in color. its loss (destruction, absence) may lead to death and its presence in 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. The role of Rasayana (Rejuvenation therapy) in Vyadhikshamatva

The Rasayana means the way for accomplishing superiority in all body tissue by some special procedures and medications.<sup>[20]</sup> The Rasayana therapy is one of branch of Astanga Ayurveda. The ideas of immunity and immunomodulation are broadly discovered and used in Ayurveda, specially 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, neuroprotective 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 kurrooa* 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 antidepressant 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.

### **Level of action of Rasayana drugs**

Rasayana work 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 manuscripts, several Acharays have termed numerous useful preparations and method of ways for children. Acharya Kashyapa describes a special formulation by the name of “Lehana”.<sup>[42]</sup>

The particulars specified about Lehana are as under.

### **Purposes of Lehana**

1. To heighten the growth & development by providing sufficient nourishment.
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>

### **Contraindications of Lehana**

Circumstances in which 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 stated 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 pluricaulis* 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.), Shankhapuspi (*Convolvulus pluricaulis* Chois.)
  - d) Svarna (Gold), Kaidarya (*Murraya koenigii* Linn), Vacha (*Acorus Calamus* Linn.).<sup>[48]</sup>

#### **DISCUSSION**

Vyadhikshamatva means resistance to diseases or immunity against diseases is of two types 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 similar as normal condition of the Kapha, Bala and Oja. Oja is final and excellence of the product of 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, ultimately increase in Oja and similarly increase in immunity. Many researches proved that, immunomodulatory effect of drugs which are used in Rasayana therapy. Medhya Rasayana 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.

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