



Review Article

ROLE OF *BALA* (IMMUNITY) IN COVID-19 PANDEMIC: AN AYURVEDIC REVIEW

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ABSTRACT

The whole world is suffering from the disaster COVID-19 pandemic caused by the novel Coronavirus SARS-CoV-2. This novel Coronavirus is extremely contagious that can cause life threatening respiratory symptoms. Due to these reasons, it has evolved as a serious hazard to humanity in short span of time. In this panic situation everyone is looking for confirm cure for this disease. But no Authorized treatment is available yet to overcome against COVID-19. Adopting preventive measures is the only option to avoid its infection. Various studies suggest that Corona virus usually affects or shows severe symptoms in the people with low immunity and also mortality rate is higher in immuno compromised and comorbid patients. Therefore strong and healthy immune system is necessary to safeguard the human being from various pathogenic organisms including corona virus. Hence, strengthening the immunity of human body is the best way to restrict COVID-19 infection. This Study is a small effort to enlighten the Ayurvedic broad concept of Bala which has a direct relation with *Ojus* and *Vyadhikshamatva* which plays vital role in prevention of various diseases (*Vyadhi pratibandhakatwa*). This Ayurvedic concept has the potential to built strong immunity against COVID-19 which may be helpful in this battle against the current scenario of the disastrous COVID 19 pandemic for the survival of human beings.

KEYWORDS: *Bala*, *Vyadhikshamatva*, *Ojus*, Immunity.

INTRODUCTION

The world is experiencing the tragedy of the disease caused by a Novel Coronavirus named SARS COV2. This COVID-19 is extremely infectious and in only couple of months became a genuine danger to humanity everywhere in the world. WHO has declared COVID19 as a global health crisis.

This Coronavirus comprises to a group of single stranded RNA viruses that cause diseases in mammals and birds. Patients infected with coronavirus presents with mild to serious respiratory tract infections. The mode of transmission of disease from human to human is via droplets or by direct close contact with the infected person. The time from exposure to symptom onset known as incubation period is thought to be 2 to 14 days. Sore throat is the first clinical presentation along with symptoms like fever, myalgia, dry cough, loss of smell and taste severe dyspnea, Pneumonia, fibrosis of the lungs. However, individuals with COVID-19 may have some, all or none of the above symptoms. People with older age and existing medical conditions have higher risk of serious illness from COVID-19.^[1,2]

As it is a highly contagious disease only prevention is the way by using sanitizers, mask and practicing social distancing. The severity and fatality of COVID-19 have been directly related to the age and immunity of a person.^[3]

No confirmed treatment is available yet to overcome against COVID-19. The immune system is the best defense because it supports the body's natural ability to defend against pathogens like viruses, bacteria, fungus, etc. and resists infections.

Ayurveda the ancient medical science and science of life propounds that prevention is an equally important aspect of disease management as a cure and thus, giving strength to our immune system is the most logical way to assist the body to fight against the COVID- 19 infection.

Swasthasya Swasthya Rakshanam I
Aturasya Vikara Prashanamch II ^[4]

Ayurveda has stated many concepts which empower immunity of human being. Acquired immunity or herd immunity is the weapon for keeping oneself away from Infection. The concept of *Bala*, *Ojus*, and adopting a way of living as directed by Ayurveda like *Dinacharya*, *Ritucharya*, *Sadvritta*,

Navega Dharan, etc enhances *Vyadhikshmatva* (Immunity). These measures are useful in preventing the *Aupsargik Rogas* (communicable diseases), *Janapada Dhwanasa Rogas* (epidemic diseases), *Krumij Roga* (infectious diseases), *Asatmyaj Roga* (allergic disorders).^[5]

This study of the Ayurvedic concept of *Bala* and *Vyadhikshamatva* may be helpful in this battle against the current scenario of the disastrous COVID-19 pandemic for the survival of human beings.

AIM

This article is a small effort to understand the Ayurvedic concept of *Bala* and its possible role to prevent the society from COVID 19 Infection.

MATERIAL AND METHODS

The materials for the study were gathered from classical Ayurvedic literature like *Charaka Samhita*, *Sushruta Samhita*, *Ashtang Hrudaya*, etc., magazines, articles, research journals, and government advisories.

Literature Review

Bala of the body (*Sharirbala*) is one of the main factors for *Vyadhikshamatva*. *Bala* is of three types: *Sahaja* (constitutional), *Kalaja* (temporal strength), or *Yuktikrita* (acquired strength). Acquired strength or *Yuktikrita Bala* represents the immunity acquired against the disease causing agents or plans for enhancing immunity by the Ayurvedic concept.

Bala

Tatra Balen Stheeropchitamamsata Sarvacheshta Swapratighatah Sarva Varna Prasado Bahyanam Abhyantaranamch karanam Atmakam Karya Pratipati Bhavantee II^[6]

Means *Bala* imparts firm integrity to the muscles, improves the voice and complexion, and helps the person to perform his natural functions effectively. According to *Acharya Charaka* and *Sushruta* prevention and recovery of the body, health depends on *Bala* or body resistance.

Trividham Balam Itee

1) *Sahaja* 2) *Kalaja* 3) *Yuktikrita*^[7]

Sahaja Bala

Sahajam Vat Sharir Satvayo

Natural physical and mental power present by birth is called as *Sahaja Bala*. It depends on the healthiness of *Shukra* (sperms) and *Artava* (ovum). Some peoples are tough from birth because they have *Uttam dhatu Sarata*. In modern science, natural immunity subdivides into, species immunity (*Jathiniyatha*), racial immunity (*Kulaniyatha*), and individual immunity (*Pratyatmaniyat Prakritis*).

Same as explained in Ayurveda according to species, race, climate, season, age, and personal habits.

Kalaja Bala

“Kalakrutam Rutuvibhagajam Vayakrutam ch”

The strength is based on the seasons and person's age called *Kalaja Bala*. *Bala* of person will be *Hina* (less) in *Adana Kala* means in late winter, spring, and summers and it will be *Uttama* (more) in *Visarga Kala* (rainy seasons, autumn, and winter). In *Taruna Avastha* (young age) *Bala* will be *Uttama* (maximum) and in *Balya Avastha* (childhood) and *Vridhha Avastha* (old age) *Bala* will be *Alpa* (minimum).

Yuktikrita Bala

“Yuktikrutam Punastadahar Cheshta Yogajam”

Yuktikrita Bala means acquired strength which is obtained by the proper healthy diet and physical activities. This type of strength is obtained by a logical combination of the intake of nutrition rich food like meat, ghee, milk products, etc., and other factors such as proper exercise, rest and the use of strength-building and rejuvenating drugs^[8]

Shleshma

Shleshma, the *Kapha* is one of the *Tridosha* which retains the properties such as *Snigdha*, *Sita*, *Guru*, *Manda*, *Slaksna*, *Mrstna*, *Sthira*.^[9] *Shlesma* in normalcy gives strength to the body and is known as *Bala*. The *Bala* itself is considered as *Ojas*. *Bala* and *Ojas* derive their strength from *Shlesma*. *Kapha* in a normal state provides solidness, stability, protection, heaviness, courage, resistance and immunity.^[10]

Ojas

The essence of *Saptadhatus* is called *Ojas* and it is the seat for strength and it is one among the seats of *Prana*, hence called *Bala*. The location of *Ojas* is in the *Hridaya* which is *Somatmaka* (watery), clear (transparent), viscous, greasy and slightly reddish yellow. Its destruction, loss, or absence may lead to death and its presence in the body assures survival.

Classification of Ojas

According to *Chakrapani* *Ojas* is of two types:^[11]

Para Ojas

Para Ojas is the chief-top quality *Ojas*, where *Prana* the life inhabit. Its quantity is *Ashtabindwatmak* (8 drops) which is present in *Hridaya*. Loss of minute quantity of *Para Ojas* can result in death. It is white-yellowish red.

Apara Ojas

Quantity of *Apara Ojas* is half *Anjali*. It is less important as compared with *Para Ojas*.

According to *Sushruta*, there are three stages of abnormality of *Ojas* are:^[12]

Oajovisransa

Signs and symptoms of *Oajovisransa* are slackness of joints, body ache and shifting of *Doshas* from their seat, weakness and impairment in the execution of the action.

Oajovyapada

Signs and symptoms of *Oajovyapada* are heaviness of the body, joint stiffness, depression, body ache, drowsiness and non-pitting edema.

Oajokshaya

Signs and symptoms of *Oajokshaya* are unconsciousness, wasting of body mass, drowsiness, coma and sudden death. According to Ayurveda, *Ojas* is the principal factor that plays an important role in the defense mechanism of the human body.

Acharya Charaka stated that, during conception, *Ojas* is the *Sara Bhaga* of *Shukra* and *Artava* which is known as *Garbha Rasa*. *Garbha Rasa* is an Amniotic fluid that nourishes the embryo for proper growth. It circulates in the fetus and increasing the strength of *Dhatu*. *Ojas* promote cellular growth and prevent cellular destruction. It is

Types of Bala (Immunity)

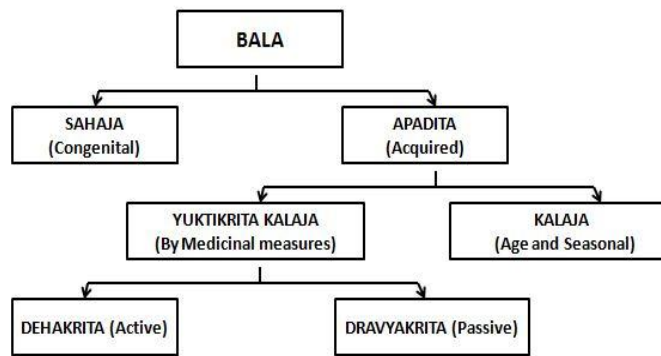


Figure 1: *Bala* (immunity) types

II) Types of *Bala* - 1. *Pravara* 2. *Madhyama* 3. *Avara*

III) *Bala* according to *Kala* (season)

	<i>Uttam</i>	<i>Madhyam</i>	<i>Hina</i>
<i>Adankala</i>	<i>Shishir</i>	<i>Vasant</i>	<i>Grishma</i>
<i>Visargakala</i>	<i>Hemant</i>	<i>Sharad</i>	<i>Varsha</i>

IV) *Bala* according to *Vaya* (age)

<i>Vaya</i>	<i>Bala</i>
<i>Balyavastha</i>	<i>Madhyama</i>
<i>Madhyamavastha</i>	<i>Uttam</i>
<i>Vridhnavastha</i>	<i>Heena</i>

V) *Bala* according to *Dosha* & *Kala* of the day

<i>Bala</i>	<i>Uttam</i>	<i>Madhyam</i>	<i>Hina</i>
<i>Dosha</i>	<i>Kapha</i>	<i>Pitta</i>	<i>Vata</i>
<i>Kala</i>	<i>Purvardha</i>	<i>Madhyanha</i>	<i>Aparanha</i>

an important site of *Prana*, and if it is affected, it can cause sudden death. [13]

Vyadhikshamatva

“Vyadhikshamatvam Vyadhibalavirodhitvam

Vyadhiutpad Pratibandhkatvamiti Yawat” I [14]

Ayurveda is a science that deals not only with preventing the disease but also curing the disease by increasing the strength of the body. Many fundamental principles are explained regarding Immunity. *Vyadhikshamatva* (immunity) is explained as the ability to resist the disease-causing factors to avoid occurrence as well as recurrence of the *Vyadhi*. The concept of immunity contains two factors:

Vyadhi Uttpadha Prathibandhakatvam – It is nothing but the resistance power against the causative factors of a disease. It is a counter-attacking strength of the body to inhibit the occurrence as well as recurrence of the disease.

Vyadhi Bala Virodhitvam –: It is the ability to inhibit or resist the strength or severity of the diseases. Means power to resist the development of the disease.

Yuktikrit Bala

Bala can be improved with the help of *Yukti* means by logic or by strategy with these factors:

1. Diet - Balanced Diet (Ahara)

Food is one of the responsible factors for the growth and development of *Bala* and *Ojus*. No medicine is equivalent to food. A proper diet can help human beings to live a disease-free life. *Dhatu sarata*, the balance of *Doshas*, *Agni*, and the health of *Srotasas* should be maintained with a proper nutritious diet to maintain immunity. With the help of a properly balanced diet digestive power ultimately increases resulting in the formation of *Ahara Rasa*. This *Ahara Rasa* has nutrients of *Sapta Dhatus* and supports the body strength and immunity. The formation of *Bala* and *Ojas* depends on the qualities of *Dhatu*s. Therefore, food and digestion play a very important role in the production of *Bala*. [15]

2. Code of Conduct (*Sadvritta/Achar Rasayana*)

It suggests ethical, moral and behavioral conduct such as truth, personal and public cleanliness, non-violence, mental and personal hygiene, compassion, devotion. Follow the proper diet, well sleep, and *Brahmacharya* (supreme reality). Daily massage of a body is done with *Tila Tail*. One should take bath every day, clean tongue, *Kavala- Gandusha*, cut hair, mustache, body hair, and nails thrice in 15 days, wear clean good cloth every day, comb the hair, and apply oil to head, ear, nose, and feet every day, one should clean excretory orifices and feet frequently, daily walking, use of medicated *Dhumpan* improves the *Bala* of organs that are situated above the neck (hairs, ear, etc.) These activities may have an apprehensible influence on strength as explained in Ayurveda.^[16]

3. Medication (*Aushadhi*)

In Ayurvedic texts, many combinations of the drug are mentioned with strength improving results. Mainly they are explained in *Rasayan- Vajikaran Adhikar* and others are under *Chikitsa sthana*. Strength enhancing drugs means *Balyakar Dravya* dominantly have *Madhur Rasa* (sweet taste), *Madhur Vipak* (sweet property) and *Sheet Virya* (cold potency).^[17]

4. Daily Regimen (*Dinacharya*)

Daily regimen includes *Drva Achamana* (sipping of water), *Anjana* (collyrium), *Abhayanga* (massage), *Snana* (bathing), *Anulepana* (ointments), wearing of cloth, footwear, coverings for protection (like a mask, cap), washing of feet. *Danta Dhawana* (brushing with *Neem*), *Jihwa Nirlekha* (tongue cleaning), *Gandusha* (gargling with *Tila Taila*), *Kavala* (mouthwash by medicated paste prepared with antiviral drugs), *Dhumapana* (smoking by medicated paste prepared with antiviral drugs), *Nasya* (nasal drops such as *Tila Taila* and *Anu Taila*), *Vyayama* (exercise & *Yoga*) and awakening at *Bramha Muhurtha*, etc.^[18]

5. Seasonal Regimen (*Rutucharya*)

The immunity, body texture and luster of human beings is magnified by practicing proper logical diet and regimen according to season. The schedule which is healthy for everybody regarding diet and practices is *Rutu Charya*. The principal treatment of the derangement of the season is stated as old herbs, boiled water & *Rutu Sodhana* (*Panchakarma*).^[19]

6. Rejuvenation Therapy (*Rasayana Chikitsa*)

Rasayana Chikitsa is a magical treatment that can improve the Immunity and strength of the body. The *Rasayana Chikitsa* is used in preventing and curing diseases as well as the prevention of senility.

Acharya Kashyapa has explained the concept of *Balarasayana* to improve immunity. *Asara Dhatus* should be strengthened by *Rasayana Chikitsa*. *Chakrapani* holds the view that no such types of diseases can occur if effective *Rasayana* is taken beforehand.^[20, 21]

Milk, Ghee, Honey, *Amalaki* (*Emblca Officinalis*), *Guduchi* (*Tinospora cordifolia*), *Haridra* (*Curcuma longa*), *Ashwagandha* (*Withania somnifera*) & *Yastimadhu* (*Glycyrrhiza glabra*) are some of the premier *Rasayanas* mentioned in Ayurveda which has a good effect on the immune system.^[22]

Types of *Rasayana*

i. *Naimittika Rasayana*- It is used for a particular curative reason. It accelerates the speedy recovery from the disease. Example; *Dhatri Rasayana*, *Brahmi Rasayana*, *Triphala Rasayana*.

ii. *Ajastrik Rasayana*- It is utilized to built & maintaining good health with diet, exercise and a good lifestyle. It involves consumption of milk, honey, *Ghreeta* and maintaining the discipline of the lifestyle.

iii. *Kamya Rasayana*- It is utilized to enhance & refine the functions like aspiration and intellect. Examples are *Shankhapushpi*, *Ayush Kamya* for increasing longevity.^[23]

7. *Swarna Prashan*

Acharya Kashyapa in *Kashyapa Samhita* explained the *Swarna Prashan* which should be given to newborns as an immunity booster, explained in *Jatakarma Sanskara* of *Navajata*. It protects the baby from infection, enhances intelligence, and acts as a memory booster.^[24]

Immunity and Covid- 19: WHO

Currently, there is no licensed medication available to cure COVID 19, hence our immune system is the best defense, as it supports the body's natural capacity to protect against disease causing pathogens such as viruses, bacteria, protozoan, fungi and withstand against various infections. If we built our immune system stronger, the various infections such as COVID 19 go unnoticed.^[25,26] World Health Organization suggested food, vaccination, drugs, and supplements for enhancing the immune system against COVID19.

The person who consumes a well-balanced nutritious diet is healthier and develops a strong immune system and ultimately has a low risk of chronic illness, infectious diseases. Vitamins and minerals are vital. Vitamin B, insoluble in water, protects from infection. Vitamin C protects from flu-like symptoms. Lack of Vitamin D and Vitamin E can lower immunity and eventually cause various infections. Vitamin D can be found in sunlight, and

Vitamin E can be found in, for example, oil, seeds and fruits. Zinc is necessary for maintaining the immune system. Food rich in protein should be the top priority because it has immune properties, Immunoglobulin production capability, and potential antiviral activity.^[27-29]

Under nutrition is harmful and life-threatening for patients with COVID 19. Hence, every individual should take well balanced nutritious diet every day which contains fruits, green leafy vegetables, nuts, whole grains, sprouts, unsaturated fats and foods from animal sources. Drinking at least 8 to 10 cups of water daily is recommended.^[30]

Along with diet, physical activity is another factor. Individuals should be active and perform physical exercise regularly to boost the immune system and should have proper sleep.^[31]

Boosting the immune system through nutrition and an active lifestyle should be recommended for COVID-19 patients because no registered medicine is available for its treatment.

DISCUSSION

According to Ayurveda, immunity means the ability to resist the disease-causing factors to avoid occurrence as well as recurrence of the disease and also provide rapid recovery from it. *Bala* is one of the main factors of *Vyadhikshamatva*, which is the biological defensive power of the body to fight against diseases and to prevent the future development of diseases. As in modern science, immunity had 2 types- Innate and Acquired immunity. In which inborn capacity is Innate and resistance developed in the body against any specific foreign body like bacteria, viruses, toxins, vaccines, or transplanted tissues are Acquired Immunity.

In Ayurveda, *Vyadhikshamatva* mostly depends on the *Bala* of the body. Therefore, the types of *Bala* are correlated with the types of immunity in Ayurveda. As *Sahaja Bala* which comes from Parents and inherited it develops and increases the innate immunity in the body. *Kalaja Bala* is developed according to the *Ritu*, *Kala* and *Vaya*. The *Yuktikruta Bala* comes from the *Aahara*, *Vihara*, and *Rasayana*. *Vajikarana* medicines are useful to develop the acquired immunity. *Bala Vruddhikara Bhavas* are the factors which help to maintain proper health & immunity in human being. By following rules and principles like *Dincharya* which is daily regimen helps to set a proper daily regimen, proper rules for living life, *Ritucharya* also helps to provides proper *Aahara*, *Vihara*, etc according to every *Ritu*, *Rasayana* therapy forms strength and health and helps to avoid aging effects. *Achara Rasayana* gives proper Behavioral conduct for physical as well as psychological health, *Sadvritta* (code of conduct) for

social behavior and mental health, *Vega Dharana* which is a very big cause for disease development nowadays, that are called as natural urges that are suppressing due to work, shyness, etc. By implementation of all these principles in our life, we are able to form a natural immunity against all diseases. Developing the *Bala*, *Ojas*, balance of *Kapha Dosh*, *Dhatu Saarata*, etc is defiantly helpful to increase immunity in our body.

CONCLUSION

As there is no specific treatment, no licensed medicine or therapy has shown promising results in preventing as well as curing the COVID 19 disease; hence enhancing an individual's body immunity is the best way for preventing COVID 19 infection. Modern medicine has very limited resources for improving immunity. Ayurveda has the potential to fill up this lacuna with the concept of *Bala*, *Ojus* and *Vyadhikshamatva*.

Bala is an important property of the body. *Bala* is considered as a responsible factor for *Vyadhikshamatva* (immunity). It is associated with *Kapha*, *Vata dosha*, and *Mamsa, Asthi, Majja* and *Shukra Dhatu*. *Sahaj* and *Kalaj Bala* can be improved and maintained with the help of *Yukti* i.e., with the help of the above explained *Balyakar Aahar*, *Dincharya*, *Ratricharya*, *Ritucharya*, *Sadvritta*, *Achara Rasayana* etc are when implemented in daily life it helps to provide good health and immunity.

This Ayurvedic concept has the potential to built strong immunity against COVID-19 which may be helpful in this battle against the current scenario of the disastrous COVID-19 pandemic for the survival of human beings.

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