



Original Article

IMMUNITY-AYURVEDIC PERSPECTIVES AND PRACTICES

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Abstract

Introduction: Immunity is defined as the capacity of the body to resist pathogenic agents such as bacteria, viruses etc. The world is facing a health crisis created by the outbreak of Corona Virus Disease (COVID-19). The vulnerable group of this epidemic includes immunocompromised people and the stakeholders had advised the people to follow the immunity boosting self-care advisories to prevent the infection of the disease. This essay is a humble attempt to explain the Ayurvedic concepts of immunity and to explore different immunity practices. **Review of literature:** The concept of Vyadhikshamatva, Bala, Ojas, Immunity, Immunodeficiency were explained using literature review. **Materials and Methods:** Data on the different type of immunity practices were collected by Extensive literature survey, searching the official websites of Ministry of AYUSH of Central and State Governments and also by Telephonic communication with Ayurveda experts. **Results and Discussion:** The immunity enhancing practices includes the use of Rasayana, Single herbs and formulations having immunity enhancing property, Practice of Swarna Prasha, Lehana, Prakara yoga, Karkidaka kanji, Achara Rasayana, Balanced diet, Adoption of Dinacharya, Ratricharya, Ritucharya, Trayopasthambha and Sadvrutta, Avoidance of Prajnaparadha, Proper Practice of Panchakarma, Garbhini Paricharya, Sutika Paricharya, Navajatasisu paricharya, Rakshoghna karma and Immunity programmes such as Ayur Raksha and Ayur Shield programmes. The discussion was done on the basis of collected data and conclusions were drawn. **Conclusion:** The Ayurvedic immunity practices are able to combat the emergence of new diseases like COVID-19.

Keywords: Bala, COVID-19, Immunity, Prakara Yoga, Rasayana, Vyadhikshamatva

INTRODUCTION

Health is the most cherished asset in the living world since time immemorial. Ill-health of body and mind has pursued mankind and ancestral men have fought against these diseases with weapons they developed with

Observations and continuous experimentations –

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the weapons of drugs and extracts from the natural resources around them. These observations and recordings of our wise ancestors gave rise to the jewel of Indian civilization – Ayurveda.

Ayurveda is the science of life, the way of living in harmony with the laws of nature. The unique objective of Ayurveda includes maintenance and promotion of health in healthy individuals and cure of the illness in the diseased. The famous Ayurveda scholar Susruta describes the indicators/components of health under the heading ‘Swastha lakshana’ in Susruta Samhita Sutra stana, Doshadhatumala Vijnaneeya Adhyaya.^[1]

Here Susruta portrays that a healthy human being should have a healthy body, healthy mind, perfectly sensitized sense organs and a sound soul with equilibrium of three doshas (body humours), normalcy of Agni (Digestive capacity), proper functioning of Dhatus (Tissues) and proper evacuation of waste products from the body. This can be considered as the earliest scientific reference regarding the positive concept of health similar to the definition of health approved by the preamble constitution of World Health Organization and it clarifies that Health is defined as ‘a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity, which includes the ability to lead a socially and economically productive life’.^[2]

Ayurveda has two major aspects namely Swasthavrittha and Athuravrittha. Swasthavrittha

deals with the maintenance of health of a healthy person and Athuravrittha deals with the cure of the diseased. While traversing through all the ancient scriptures of Ayurveda, we found that, all have focussed firstly on Swasthavrittha and this implies that the prevention of diseases had always been the primary concern of this science. The sloka in Bhagavat geeta “Prakshalanath hi pankasya doorat asparshanam varam” justifies the concept of ‘Prevention is better than cure’.

Swasthavritta is divided into two elaborated branches such as Vaiyaktika Swasthavritta (Personal Health) and Samoohika Swasthavritta (Social Health). Envisioning the health of human kind in perfection, Swasthavrittha leads in elegance with the concepts of preventive medicine which emphasizes on the regimens to be followed for being healthy.

The world is facing a health crisis created by the outbreak of Corona Virus Disease (COVID-19). It is an illness caused due to Novel Corona virus 2, named as Severe Acute Respiratory Syndrome Corona Virus- 2 (SARS CoV 2). This disease was first reported from Wuhan City of China during December 2019. The most common symptoms of COVID-19 include fever, dry cough, breathlessness, sore throat, rhinitis, headache, anosmia, shortness of breath, fatigue, body ache, diarrhoea, vomiting, weakness etc.

The COVID-19 spreads through droplet infection, aerosol and through fomite transmission. Ayurveda explains the communicable diseases under the term ‘Samkramika roga’ – the disease that spreads

from one person to another. The World Health Organization (W.H.O) has declared COVID-19 epidemic as a Pandemic affecting almost all countries in the world with massive deaths. The word 'Janapadodhvamsa' is apt in the condition of COVID-19 attack. Janapadodhvamsa means the situation involving the destruction of a large population spread over a small locality, a country, a part of the world or the entire world. As the world scrambles to find a cure for Covid-19, health experts have suggested boosting the body's immune system may help minimize the effects and hasten the recovery.

The vulnerable group of this epidemic includes immunocompromised people like old age people, pregnant women, children, persons with comorbidities such as hypertension, cardiac illness, lung problems etc, who are at a high risk of developing complications. People with less immunity are more susceptible to the attack of the virus and are easily infected with COVID-19. Here arises the important question – Whether Immunity can prevent the occurrence of COVID-19. Experts had detailed that the many widespread pandemics were controlled by adopting the concept of Herd immunity.

The importance of immunity has paved the attention of stake holders also as The Prime Minister of India, had advised the people to follow the immunity boosting self-care advisories published by the Ministry of AYUSH, Central Government of India. The Kerala Government led by the Respected Health Minister had sanctioned the proposal of Ayur Raksha Programme for the prevention, mitigation and rehabilitation of COVID-19 and immunity boosting medicines

were supplied across the Kerala as part of this programme through Ayur Raksha clinics.

Despite the control measures, the number of cases is increasing day by day. In India, the disease has reached its next stage of the disease known as community transmission. The people will have to live with the Corona virus till the containment /treatment measures are equipped. Reverse quarantine measures and immunity boosting methods are to be adopted by the people to control the spread of the virus. All the countries are looking for an alternative solution for the control of the disease and so as India.

German researchers have proposed testing 100,000 people for antibodies to SARS-CoV-2 and are giving “Immunity Certificates” to those who have these antibodies which presumably make them resistant to reinfection. The United Kingdom has floated the ideas of “Covid pass Passports”.

The concept of immunity and immunity practices mentioned in the classical literatures and contemporary textbooks of Ayurveda should to be revealed for making a detailed explanation. The immunity practices prevalent in the society and the programmes implemented by state and Central Government should be reviewed. This essay is a humble attempt to explain the concepts of immunity in Ayurvedic and Modern medical science perspective and to explore the immunity practices mentioned in the textbooks, advisories by government and prevalent in the society.

REVIEW OF LITERATURE

Immunity – Ayurveda Perspective

The word Vyadhikshamatva²² is made up of two words; Vyadhi (disease) and Kshamatva (suppress or overcome). Vyadhi is the condition which come into existence as consequence of non-equilibrium between Doshas, Dhatus and Malas. The word “Kshamatva” is derived from “Kshamus sahan” which means to be patient or composed to suppress anger, to keep quite or to resist.

Vyadhikshamatva means the factor which limits the pathogenesis and opposes the strength of disease. Chakrapani Datta, while commenting on Charaka Samhita, gave his view on the term Vyadhikshamatva and explained the term in two divisions - Vyadhi-balavirodhitva: It is the capacity to restrain and withstand the strength of the diseases i.e. strength to resist the progress of disease and Vyadhi-utpadakapratibandhatva: The resisting power of the body competent to prevent the occurrence and re-occurrence of the disease.

Bala is the strength or immune power of the body and is of three types and they are Sahaja (constitutional strength), Kalaja (temporal strength) and Yuktikrita (acquired strength). Sahaja Bala (Constitutional strength) is the inherent capacity of the body to fight against disease which is present in the mind and body from birth itself. It is derived from maternal (Matrija) and paternal (Pitrija) factors.

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.

Yuktikritabala (Acquired strength) is the one which is achieved by the combination of diet and physical activities. is the strength acquired and attained by healthy practices related to diet (Ahara) and regimen (Vihara).^[3]

Ojas is the essence of rasadhidhatus and is called bala (strength or power). The qualities and functions of ojas are similar to shlesma (kapha). Ojas is of two type's viz. Para and apara. Para Ojas is located in the heart and measures 8 drops while Aparaojas is spread all over the body and measures half an Anjali (one handful). Ojas corresponds to the immune function of the body. Ojas is the final essence of all dhatus, similar to kapha and provides Sareerika (physical) and Manasika (mind) bala that help in fighting against disease. Avoiding all factors that cause unhappiness or mental worries and meticulously taking proper diet and drugs that are conducive to the heart results in the maintenance of Ojas.

If the quantity of Para Ojas decreases then the person will die. On the contrary if the quantity of Apara Ojas decreases or is vitiated, there manifests 3 kinds of abnormalities and they are Ojokshaya (decrease in its normal quantity), Ojovyapat (Ojas gets vitiated with vitiated dosha and dushya), and Ojovisramsa (displacement from its normal place) and as a result many diseases are manifested.^[4]

Balavridhikara Bhavas (Factors increasing bala)^[5]

There are 13 factors responsible for increasing Bala (strength) of the body.

- Birth in a country where people are naturally strong (Balawat purushe deshe janma)
- Birth at a time when people naturally gain strength (Balavat kale janma)
- Favourable deposition of time (Sukhascha Kalyoga)
- Excellence in the qualities of seed i.e. sperm and ovum, (Beeja guna sampat)
- Excellence in the qualities of Asaya(Kshetra guna Sampath)
- Excellence of the ingested food(Ahara sampat)
- Excellence of the physique (Sarira sampat)
- Excellence of the Satmya (Satmya sampat)i.e. wholesomeness
- Excellence of the mind (Satva sampat)
- Favourable deposition of the nature (Swabhava samsidhi)
- Young age of both the parents i.e. they should not be over aged (Yuwanam)
- Habitual performance of exercise (Karma)
- Cheerful disposition and immense love for each other (Samharsha)

Vyadhikshamasaha Purusha

Persons who are with good immune power and bodily strength have some characteristics and they are Sama Mamsa Pramana (compact and firm musculature), Sama Pramana (Firm and perfect body parts), Sama Samhanana (Proper transformation of tissues), Dridhendriya (Perfect functioning of sense organs), Kshut Pipasa saha (Able to control thirst and hunger), Atapa-Sheeta Saha (Body can withstand ill effects of excess heat and coldness) Vyayama saha (Body is able to withstand strenuous work), Sama Pakta (Good digestive power), Sama Jara (Proper digestion), Sama Mamsa Chaya (Increased bulk of muscles).

Avyadhikshama Purusha

They are persons with less immunity and they are Ati-Sthoola (Excessively obese persons), Ati-Krishha (Excessively emaciated person), Anivista-Mamsa (Individual having improper musculature), Anivista-Asthi (persons having defective bone tissues), Anivista-Shonita (persons with defective blood), Durbala (Constantly weak person), Asatmya-Aaharopachita (Those nourished with unwholesome food), Alpa-Aaharopachita (Those taking diet in small quantity) and Alpa-Sattva (Individuals with feeble mind).

Immunity- Modern Perspective

Immunity is defined as the capacity of the body to resist pathogenic agents. It is the ability of body to resist the entry of different types of foreign bodies like bacteria, virus, toxic substances, etc. Immunity is basically classified into two types - Innate immunity and Acquired immunity.

Innate immunity or natural immunity is the inborn capacity of the body to resist pathogens. This type of immunity represents the first line of defence against any type of pathogens. Therefore, it is also called non-specific immunity. Eg- enzymes in digestive juices and the acid in stomach destroy the toxic substances or organisms entering digestive tract through food.

Acquired immunity is the resistance developed in the body against any specific foreign body like bacteria, viruses, toxins, vaccines or transplanted tissues. So, this type of immunity is also known as specific immunity. It is the most powerful immune mechanism that

protects the body from the invading organisms or toxic substances. Lymphocytes are responsible for acquired immunity. ^[6]Acquired immunity is classified into active immunity and passive immunity

Active immunity is an immunity which an individual develops as a result of infection or by specific immunisation and is usually associated with presence of antibodies or cells having a specific action on the microorganism concerned with a particular infectious disease or its toxin. Active immunity may be acquired in three ways,

- following clinical infection, eg. Chicken pox, rubella and measles
- following sub-clinical or in apparent infection, eg. Polio and diphtheria
- following immunisation with an antigen which may be a killed vaccine, a live attenuated vaccine or toxoid.

Active immunity can be broadly classified into three types and they are Cellular immunity, Humoral immunity and Combination of both Cellular and Humoral immunity.

Cellular immunity is defined as the immunity developed by cell-mediated response. It is also called Cell-mediated immunity or T cell immunity. It involves several types of cells such as T lymphocytes, macrophages and natural killer cells and hence the name cell mediated immunity. Cell-mediated immunity does not involve antibodies. Cellular immunity is the major defence mechanism against infections by viruses, fungi and few bacteria like tubercle bacillus. It is also responsible for delayed allergic reactions and the rejection of transplanted tissues. Cell-mediated immunity is offered by T lymphocytes and it starts when T cells come in

contact with the antigens. The antigenic materials released from invading organisms are presented to the helper T cells by antigen-presenting cells.

Humoral immunity is defined as the immunity mediated by antibodies, which are secreted by B lymphocytes. B lymphocytes secrete the antibodies into the blood and lymph. The blood and lymph are the body fluids (humours). Since the B lymphocytes provide immunity through humors, this type of immunity is called Humoral immunity or B cell immunity. Antibodies are the gamma globulins produced by B lymphocytes and they fight against the invading organisms. The humoral immunity is the major defence mechanism against the bacterial infection.

Combination of Cellular and Humoral immunity works with one another and with certain accessory cells like macrophages and human K (killer) cells, and their joint function constitute the complex event of immunity. For instance, one subset of T cells (suppressor T-cells) are required for the optimal production of the body to most antigen and other types of T-cells (Suppressor T-cells) inhibit immunoglobulin synthesis. Antibody-dependent cell mediated (K) cytotoxic cell recognise membrane viral antigen through specific antibody, whereas natural killer (NK) cells destroy non-specifically virus-infected target cells.

Passive immunity is the transfer of antibodies from one body (human or animal) to another to induce protection against disease. In other words, the body does not produce its own antibodies but depends up on ready-made

antibody. Passive immunity can be induced by administration of an antibody-containing preparation (immunoglobulin or anti serum), by transfer of maternal antibody across the placenta and by transfer of lymphocyte, to induce passive cellular immunity.

Herd immunity/community immunity describes a type of immunity that occurs when the vaccination of a portion of population for herd provide protection to unprotected individuals. Herd immunity theory proposes in diseases passed from individual to individual, it is difficult to maintain a chain of infection when a large number of populations are immune. The higher the number of immune individuals the lower likely hood that a susceptible will come in contact with an infectious agent.

Immune deficiency diseases are a group of diseases in which some components of immune system are missing or defective. Normally, the defence mechanism protects the body from invading pathogenic organism. The organisms, which take advantage of defective defence mechanism, are called opportunists. Immune deficiency diseases caused by such opportunists are of two types and they are Congenital immune deficiency diseases and Acquired immune deficiency diseases.

MATERIALS AND METHODS

Data on the different type of immunity practices were collected by Extensive literature survey of classical and contemporary textbooks of Ayurveda and journal articles. The data was collected by searching the official websites of Ministry of AYUSH of Central and State

Government for Immunity boosting advisories. Data was also collected by Telephonic communication with Ayurveda experts on immunity practices prevalent in the society. The discussion was done on the basis of collected data and conclusions were drawn.

RESULTS AND DISCUSSION

Immunity enhancing practices described in various classical literatures of Ayurveda, journal articles and official websites of AYUSH departments of Central and State Governments were collected and was systematically arranged under the following practices prevalent in our country and they are

- Use of single herbs and formulations having immunity enhancing property
- Proper administration of Rasayana
- Administration of Swarna Prasha, Lehana and Prakara yoga for children
- Administration of Karkidaka kanji in Kerala
- Practice of Achara Rasayana and Balanced diet
- Proper practice of Dinacharya, Ratricharya and Ritucharya
- Trayopasthambha palana and Sadvrutta Palana
- Avoidance of Prajnaparadha
- Adequate Practice of Panchakarma
- Proper practice of Garbhini paricharya for pregnant women
- Proper practice of Sutika paricharya for purpureal women
- Practice of Navajatasisu paricharya and Rakshoghna karma for newborn child
- Immunity programmes

1. Use of single herbs and formulations having immunity enhancing property

Immunity enhancers-Single drugs

A wide variety of Ayurvedic drugs are found to have Immuno-modulatory and

antioxidant property, and these herbs can be used for enhancing the immune system of the body. The single drugs having immunomodulatory effects are

- Haridra (*Curcuma Longa*) - Humoral antibody response to SRBC.
- Guduchi (*Tinospora Cordifolia*) – Macrophage activation, delayed type hyper sensitivity, bone marrow cellularity and α -esterase cell
- Ashwagandha (*Withania Somnifera*) – bone marrow cellularity, enhancement in phagocytic activity of peritoneal macrophages, inhibited delayed type hypersensitivity
- Surasa (*Occimum sanctum*) – enhance the production of RBC, WBC and haemoglobin
- Bhunimba (*Andrographis Paniculata*) – delayed type hyper sensitivity, significant increase in total WBC count, increased number of plaques forming cells in spleen
- Lasuna (*Allium sativa*) – Hemagglutination
- Punarnava (*Boerhavia diffusa*) – Enhancement of total WBC count, increased bone marrow cellularity, enhancement in circulating antibody and number of plaques forming cells in the spleen along with antigen SRBC
- Katuki (*Picrorhiza kurroa*) – cell mediated and humoral components.
- Amalaki (*Emblica officinalis*) – exhibit antioxidant properties.
- Mandukaparni (*Centella asiatica*) – human lymphocyte proliferation assay
- Pipali (*Piper longa*) – bone marrow cellularity and esterase positive cells.
- Arjuna (*Terminalia arjuna*) – inflammatory immunomodulatory and antinociceptive.

Immunity enhancers – Formulations

- Chyavanaprasha Avaleha – used for general immunity against viral infection, respiratory infections.
- Brahma Rasayana - used for improving immunity in chronic diseases, cancer fatigue and tiredness.
- Amalaka Rasayana - act as a natural source of vitamin-C and antioxidants.
- Agastya Haritaki Rasayana- mainly used for improving respiratory system immune strength.

- Ashwagandharista- provides body with antioxidants improve strength of muscles, nerves and internal organs
- Ashwagandhadi Lehya- provides body with antioxidants improve strength of muscles, nerves and internal organs and have high nutritive value
- Narasimha Rasayana - used for improving immunity in chronic diseases, cancer fatigue and tiredness.
- Arogyavardini vati- more commonly used in diseases, still useful to improve immunity against infections and skin disorders.
- Triphala guggulu- useful in bowel care and vein care
- Vasantakusumakara rasa-used against urinary tract infection and diabetes. contain metallic ingredients.
- Lohabhasma – a source for iron, useful in cardio vascular care.

Other ayurvedic medicine for immunity includes Mahakalyanaka Gritha, Brahmi Gritha, Saraswatarista, Saraswada Churna, Manasamitra Vataka and Ashwagandha Churna.

2. Proper Administration of Rasayana as immune enhancer^[7]

Rasayana means the way for attaining excellence in all body tissue through special measures and medicines. 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. Longevity, memory, good intellectual power, perfect health, youthfulness, fair complexion and colour, clarity in voice, good strength of the body, perfect functioning of sense organs, perfection in speech, sexual power and brilliance are all obtained from proper Rasayana therapy

According to need, Rasayana drugs can be administered by considering various factors

such as Age, Dhatu Deha, Prakruti, Kala, Disease to enhance memory and Srotas Medhya Rasayana drugs are life-promoting, disease-alleviating, promoters of strength, and power of intellect.

The Rasayana used in different age is explained below

- 1-10 years of age- Balya Avastha - Vacha, Swarna
- 11-20 years of age- Vruddhi - Kashmari, Bala
- 21-30 years of age- Chhavi - Amalaki, Lauha
- 31-40 years of age- Medha - Shankhapushpi
- 41-50 years of age- Twak - Jyotishmati
- 51-60 years of age- Drishti - Jyotishmati
- 61-70 years of age- Shukra - Atmagupta, Ashwagandha
- 71-80 years of age- Vikrama - Amalaki, Bala
- 81-90 years of age- Buddhi - Brahmi
- 91-100 years of age- Karmendriya - Bala Rasayana

The Rasayana that are used for the nourishment of various dhatus are explained below,

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

The Rasayana suitable for each Deha Prakruti are explained below,

- VataPrakruti - Bala, Ghrita
- Pitta Prakruti - Amalaki, Shatavari
- Kapha Prakruti - Bhallataka, Guggulu, Pippali

Rasayana used in various Srotas are explained below,

- Pranavaha Srotas - Pippali, Bhallataka, Amalaki, Maricha, Kasthuri
- Udakavaha Srotas - Panchakola, Kapardika, Shankha bhasma, Hingu,
- Rasavaha Srotas - Kharjura Mantha, Laja Manda, Guduchi

- Raktavaha Srotas - Loha bhasma, GoGhrta, Gorochana, Kushthaghnna dravya
- Mamsavaha Srotas - Karaskar, Svarna bhasma
- Medovaha Srotas - Guggulu, Shilajatu
- Asthivaha Srotas – Aabha,
- Majjavaha Srotas - Vacha, Markava, Raupya bhasma
- Sukravaha Srotas - Cow milk, Vanga bhasma
- Mutravaha Srotas - Shilajatu, Gokshura, Punarnava
- Purishvaha Srotas – Kutaja, Bilwa, Haritaki
- Swedavaha Srotas - Vanga bhasma

3. Administration of Swarna Prasha, Lehana and Prakara yoga for children as immune enhancer

Swarna Prasha^[8]

Swarna Prasha is the process of administration of Swarna bhasma (ash of gold) with other herbal extracts taken in the form of semi liquids and given to the children through their mouth. It is mentioned by Kashyapa in his classic Kashyapa Samhita. It is a unique method of immunisation which help the children to boost up the intellectual power and produces non-specific immunity to the body to fight against general disorders. It also helps in special children with autism, learning difficulty, attention deficit, hyperactivity and delayed milestone etc.

The daily dose of Swarna BinduPrasha should be given for minimum one month and for a maximum of three months continuously. It is advised to administered in Pushya nakshatra by Kashyapa. The Swarna Prasha should be given morning in the empty stomach and the normal dosage is 2-4 drops and it normally varies with the age of the child.

The benefits of Swarna Prasha includes enhanced Immune system and increased disease

resistive capacity, increased physical strength and growth of the baby. Swarna Prasha increases grasping power, analysing power and recall memory and helps in improved digestive power. It tones up skin colour and texture and protects the baby from different kinds of allergies. Research reveals that Swarna bhasma causes immunomodulatory, free radical scavenging activity, analgesic anti-stress activity and safe. 56-57 nm gold ash act on peritoneal macrophages, phagocytic index, free radical scavenging activity, brain catecholamines, 5 HT and plasma corticosterone levels.

Lehana karma

In Ayurvedic texts, various Acharyas have described countless useful formulations in the name of “Lehana”. The purposes of Lehana is to enhance growth & development by providing sufficient nutrition, promote health, complexion and strength (immunity) and to protect from various infections along with improving intellect and speech (delayed milestone).

Acharya Kashyapa mentioned Swarna Prasha, Samvardhana ghrita and Brahmi Ghrita for lehana purpose. Acharya Charaka mentioned Panchagavya ghrita, Brahmi ghrita and Kalyanaka ghrita. Acharya Sushruta has mentioned 4 recipes containing gold which provide general immunity, growth and development and enhancing the intelligence and they are

- Swarna bhasma with Kustha, Vacha, Madhu & ghee.
- Swarna bhasma with paste of Brahmi, Sankhapuspi with honey & ghee.

- Swarna bhasma, Arkapushpi, Vacha, honey & ghee.
- Swarna bhasma, Khaidarya, Sweta Durva and ghee.

Acharya Vagbhata mentions Ashtanga Ghrita, Saraswata Ghrita, Vachadi ghrita and various combination of gold for lehana purpose such as

- Swarna, Vacha and Kushta
- Swarna and Arkapushpi
- Swarna, Matsyakhya and Shankhapuspi
- Swarna, Kaidarya and Vacha

Prakara Yoga^[9]

Prakara Yoga are special medicinal recipes mentioned in the Ayurvedic Paediatric classic text book named “Arogyakalpadruma” authored by Vaidya Kaikkulangara Rama Varrier. Prakara Yoga are the indigenous practices for enhancing body immunity and to prevent diseases in children. The children are susceptible to an array of diseases due to the dosha and like the fort prevents the attack of enemies, Prakara Yogas help to prevent the occurrence of disease.

The Prakara Yoga is administered to children at various stages of their development and most of the combinations in Prakara Yoga are in the form of powder or ghee. The drug schedule starts with birth and continues to the age of 12 years for the purpose of enhancing non-specific immunity of the body and thereby preventing diseases of childhood. Thus, the preventive measures mentioned in Prakara Yoga can be studied as an Ayurvedic approach or way of immunization as the modern tool of immunization/vaccination is also age specific.

The detailed description of the various

immunomodulatory measures explained in Prakara Yoga is:

- Jaatamatra/Child born on that day: -Vacha is grinded in the juice of Tripadika and three drops of this mixture is instilled over the centre of the head.
- Pakshateeta/ Child of 15 days to 1 month: - The root, bark, leaf, flower and fruit of Bilva are taken together and powdered and is added with juice of Dhatri and given internally.
- Athipakshateeta/completed 1 month: - The drugs such as Musta, Hingu and Vidanga are powdered and added with ghee mixed with juice of Brahmi is given internally.
- Thraimasika/completed 3 months: -the drugs such as Vyosha, and powder of Sariba is added with butter and given internally.
- Shanmasika/completed 6 months: -the powder of Musalikanda and Trikatu are mixed together and added with honey is given internally.
- Ekabaddha/1-year old child: -The child of one year old should be internally administered with the following preparations in each month as:
 1. Powder of Dhatri, Musta and Vyosha with honey - 1 year 1 month.
 2. Powder of Dhatri, Musta and Vyosha added with butter - 1 year 2 months.
 3. Powder of Dhatri, Musta and Vyosha added with hot water - 1 year 3 months.
 4. Powder of Dhatri, Musta and Vyosha added with honey - 1 year 4 months.
 5. Powder of Panchakola (Pippali, Pippali mula, Chavya, Chitraka and Nagara) added with ghee - 1 year 5 months.
 6. Powder of Jeeraka and Krishna added with honey - 1 year 6 months.
 7. Powder of Dadima and Vyosha added with Dadhi masthu - 1 year 7 months.
 8. The ghee medicated with Grandhika mula and Kutaja - 1 year 8 months.
 9. Powder of Vella and Krishna added with honey - 1 year 9 months.
 10. Powder of Jeeraka and Vyosha added with sugar - 1 year 10 months.
 11. Powder of Jeeraka and Vyosha added with cow's milk - 1 year 11 months.
 12. The sugar and Jeeraka added with cow's milk - 1 year 12 months.
- Thryabdha/3 years old child: -The child of three years old should be administered

internally with following preparations mixed with sugar and ghee in each month as: -

1. Powder of Guduchi, Pippali and Vacha - 3 year 1 months.
 2. Powder of Vyosha, Yasti, Vacha, Saindhava and Abhaya - 3 year 2 months.
 3. Powder of Vella, Musta, Ela, Vacha, Nagara and Pippali - 3 year 3 months.
 4. Powder of Sariba, Vyosha, Vacha, Jeeraka and Kaisiki - 3 year 4 months.
 5. Powder of Dadima, Ambhoda, Vacha, Dhanyaka and Pippali - 3 year 5 months.
 6. Powder of Vrusciva, Bhunimba, Vacha and Ksheerataru twak - 3 year 6 months.
 7. Powder of Supyaparni, Abda, Vira, Rudhi, Chapala and Vacha- 3 year 7 months.
 8. Powder of Drona pushpa, Abda, Vacha and Dwija taru twak - 3 year 8 months.
 9. Powder of Brahmi, Abda, Vacha, Kutaja and Magadhi - 3 year 9 months.
 10. Powder of Malati pushpa, Vacha, Jeeraka and Kaisiki - 3 year 10 months.
 11. Powder of Samipatra, Jeeraka, Agni, Vacha and Kana - 3 year 11 months.
 12. Powder of Vella, Talisapatra, Agni, Pashugandha, Abhaya Vacha - 3 year 12 months.
- Panchayana/5-year-old child: - The child of five-year-old is given with medicaments said for Thryabdha with Pushkaramula instead of Vacha.
 - Ashtabdha/8-year-old child: - The child of eight-year-old is given with medicaments said for Thryabdha, added with root of Sankhapushpa instead of Vacha and the medium for mixing the compound is ghee and honey instead of sugar and ghee.
 - Dasabdha/10-year-old child: -After the tenth year, the child is given with proper medicated ghee monthly for seven days such as Abhayadi Ghrita, Vidangadi Ghrita, Jeerakadi Ghrita, Jeevaniyadi Ghrita, Drakshadi Ghrita, Saribadi Ghrita, Nagaradi Ghrita, Pippalyadi Ghrita, Bilvadi Ghrita, Trayamanadi Ghrita, Dadimadi Ghrita and Pathakutajadi Ghrita in the consecutive months.
 - Dwasasabdha/12 year old child: At 12 year 1 month, the drugs such as Ananta and Vacha along with sugar and honey is administered internally while from 12 year 2 months onwards, instead of Ananta, the drugs such as Brahmi, Munda, Shami vaka, Bhrunga,

Amalaka, Magadhi, Vishala, Vajra valli, Indurekha, Bhunimba and Gopica are administered.

The Time of administration of each formulation is for seven consecutive days. Prakara Yogas are Deepana (carminative), Pachana (digestive), Krimighna (anti-helminthic), Tridosahara (alleviates the three body humours), Medhya (brain stimulants), Shoolahara (antispasmodic), Kushtaghna (anti-microbial), Balya (improves strength), Ayushya (provides long life), Laghu (light), Srotoshodhana (clears the body, Rasayana (rejuvenative), Anulomana (mild laxative) and Vyadhihara (disease curing). Moreover, the ghee preparations mentioned from tenth to twelfth year aids in brain stimulation, providing strength and disease curing. Pharmacological studies had shown the immunomodulatory effect of the various constituents of Prakara Yoga.

4. Administration of Karkidaka kanji in Kerala

Karkidaka kanji is a traditional gruel recipe used by the Keralites during Karkidaka season to maintain the digestive activity and strengthen the immune system of the body. Karkidaka is a Malayalam month which falls between mid-July and mid-August and coincides with monsoons which is characterised by heavy torrential rain fall. The season makes the earth cool and dry after the scorching summer heat which causes aggravation of vata dosha and reduction in Sareera bala.

Karkidaka Kanji is a special porridge

medicated with Vatasamaka (medicines which alleviate Vata) and Deepaneeya (medicines which stimulate the digestion) drugs.

The Kanji is considered the simplest way for a seasonal rejuvenation as it aids digestion, and improves immunity. The Ingredients of Karkidaka Kanji includes Shashtika Shali (Red rice)-100 gm, Chandrashoora (Garden cress)-10 gm, Dashapushpa-10 gm, Trikatu Choorna-5 gm, Dashamoola Choorna-10 gm, Dhanyaka (coriander)-5 gm, Ajamoda (Ajwain)-5 gm, Methika (Fenugreek)-5 gm, Jeeraka (Cumin)-5 gm and coconut milk, jaggery and water in sufficient quantity.

Dashamula churna includes the powder of drugs of Bilwa, Agnimantha, Shyonaka, Patala, Gambhari, Gokshura, Brihati, Kantakari, Shaliparni and Prishniparni. Dashapushpa includes the drugs such as Viparitalajjalu, Bhadra, Sakralata, Lakshmana, Sahadevi, Durva, Musali, Vishnukranti, Bhringaraja and Sasasruti.

Karkidaka Kanji is made by preparing Dasamoola Kashaya by boiling 10 gm of powder in 4 glasses of water and reducing it to one glass. The Kashaya is then filtered well. Add 100 gms of shashtika rice (previously soaked for 5 hours) and continue boiling by adding Jeeraka, Trikatu choorna, Methika, Ajamoda, Chandrasoora and Dhanyaka. Dashapushpa juice was added to this and once the rice gets cooked, add sufficient quantity of coconut milk and jaggery. Take this porridge for once daily throughout the month.^[10]

5. Practice of Achara Rasayana

Achara Rasayana is a right code of socio-behavioural conduct. It teaches us a preferred life style with defined indications and restrictions. Achara Rasayana plays a key role in maintaining physical, mental and social wellbeing. Acharya Rasayana includes perception of respect and gratitude towards elderly people, practice of japa and cleanliness, regular practice charity and tapa, respect towards God, cows, Brahmana, teachers, preceptors, and old people, avoidance from Barbarous acts, proper timely sleep and awakening, daily intake of ghee and milk daily,

Achara Rasayana includes observance of Ahimsa (non-violence), worship to Gods, respect to elders, speaking sweetly and trustworthy towards others, anger-free peaceful, compassionate and stable attitude, non-indulgence in Alcohol, excessive sex and strenuous labour, practicing mantra, japa, kindness to living beings, balanced sleep, regular use of nutritious elements of diet, kind and well behaved, practicing meditation and studying religious texts. By adopting these measures, a person can be free from the emotional disturbances and, gives less stressful life and maintains the adequacy of these defence mechanisms.^[11]

6. Balanced diet

Balanced diet is defined as one which contains a variety of foods in such quantities and proportions that the need for energy, amino acids, vitamins, minerals, fats, carbohydrates and other nutrients is adequately met for maintaining health, vitality and general well being and also

make a small provision for extra nutrients to withstand short duration of leanness.

Charaka emphasises on food which are wholesome to the body like rice, green gram, rock salt, goose berry, barley, rain water, milk, ghee meat and honey. These should be consumed regularly for maintenance of health and prevention of diseases. The above reference can be taken as definition of balanced diet in Ayurveda, rice and barley as carbohydrate source, green gram, meat as source of protein, ghee as fats, honey as source of sugar, rock salt as source of mineral, milk and goose berries as vitamin and mineral source which make the components of balanced diet.^[12]

7. Proper practice of Dinacharya, Ratricharya and Ritucharya^[4]

Dinacharya

To prevent disease, one should adopt the measures like daily regimen, seasonal regimen, night regimen, proper diet, exercise, (avoiding virudhahara vihara) hygiene and codes of conducts mentioned in Ayurveda and also do proper panchakarma therapy as purificatory measures and different rasayanas. Lifestyle modification is achieved by the adoption of Dinacharya and Ratricharya procedures in daily life. Dinacharya procedures include

- Awakening during Brahma muhurta [Wake up between 4:30 am to 8:30 am]
- Ushajalapana (Drinking water in the morning) [Drink 2L water daily]
- Malavisarjana (Evacuation of bowels)
- Dantadhavana (Cleansing the teeth in morning and evening time)
- Jihwanirlekhana (Tongue scraping)
- Gandusha (Gargling) [Gandusha/kavala (Oil pulling) 1 tablespoon of sesame or

coconut oil for kavala by warm water rinse.]

- Kabala (Mouthwash) [Gargle with warm water added with a pinch of turmeric and salt, Triphala and Yashtimadhu, Suddha Tankana (2% aqueous solution), Madhoo daka (5% aqueous solution) also can be used for kavala graha.]
- Pratimarsha Nasya (Nasal instillation of medicine) [2 drops of sesame/ coconut oil each nostril]
- Abhyanga (Application of Oil over head, ears, nose and legs)
- Udwartana (Application of Herbal powder to remove oil)
- Vyayama (Different types of Aerobic exercises like yoga and Anaerobic Exercises like walking, jumping, swimming)
- Dhumapana (Medicated smoke inhalation to remove excess Kapha)
- Kartana (cutting) of Kesha (hair), Smasru (moustache) and Nakha (nail) in routine intervals
- Snana (Bath)
- Anjana (Application of Collyrium)
- Nirmala Ambara dharana (Wear clean Dress)
- Dharana of Chatra (Umbrella), Padatra (Footwear) and Usniva (Headcap) while going outside etc.
- Daily practice of Yogasana, pranayama and meditation for at least 30 minutes as advised by Ministry of AYUSH.
- Warm water bath.

Dinacharya is need of current era as various diseases are result of disturbed and deranged lifestyle and can only be corrected by intervention through ideal life style. Dinacharya is a wholesome systematic daily routine in order to maintain ideal life style.

Ratricharya

Ratricharya includes the regimen that should be followed during the night time for the maintenance of health and prevention of diseases. It includes Sandhacharya and Ratricharya starting from 6 pm and lasts up to 6

am. It includes the regimen for taking dinner, regimen to be followed for Sound sleep including practice of good sleep, rules and regulations for sexual intercourse - place, suitable time, preparations, seasonal practice for sexual intercourse.

Ritucharya

Ritucharya is defined as the regimen that should be followed in the form of diet and practices in accordance with the changes in the external environment. It is the adjustment of the body to the changes in the external environment. Ritu are of six types and there are Sisira, Vasantha, Greeshma, Varsha, Sarat and Hemantha. The diet alterations and lifestyle changes help in attaining homeostasis and the people are devoid of the diseases due to the seasonal variations. The Ritu Shodhana mentioned in the classics should also be followed for the maintenance of the health and the prevention of diseases and they are explained below

- Vitiating of Vata Dosha in Varsha Ritu is alleviated by the Shodhana in the form of Asthapana Vasti and Anuvastana Vasti in the Sravana Masa of Varsha Ritu to reduce Vatika disorders such as Vatavyadhi, Sula, Supti, Vatika Jwara etc.
- Aggravation of Pitta dosha in Sarat Ritu is alleviated by the Shodhana in the form of Virechana and Raktamokshana in the Karthika Masa of Sarat Ritu to reduce Pittaja disorders such as Jwara, Pandu, Kamala etc.
- Aggravation of Kapha Dosha in Vasantha Ritu is pacified by the Shodhana in the form of Vamana and Nasya in the Karthika Masa of Vasantha Ritu to reduce Kaphaja diseases such as Kasa, Swasa, Pratisyaya etc.

8. Trayopastambha palana and Sadvritta Palana

Trayopastambha palana means the strict observance of good practices for balanced food (Ahara), sound sleep (Nidra) and optimal indulgence in sex (Brahmacharyam).

Aharavidhi consists of the rules for taking food. It covers a wide array consisting of eating habits, eating patterns, order of taking food, time to take food, factors to be considered while taking food, regimen to be followed after taking food, identification of wholesome and unwholesome food items, knowledge of staple food and its preparations. The food pattern for controlling non-communicable diseases like Obesity, Hypertension, Diabetic Mellitus, Liver diseases should be adopted by avoidance of junk foods, canned foods, bottled juices, cola and coloured flavoured foods, misapprehension towards high calorie food, Acceptance of staple foods etc.

Proper nutrition is to be ensured through freshly cooked hot food considering individuals digestive power. Intake of warm fluids boiled with medicinal herbs (preferably shunthi, Dalchini, Trikatu) should be used as a regular drink to maintain hydration. Freshly prepared laghu and supa like ahara are preferred which is prepared out of vegetables such as Mudga, Pata, Tanduleeyaka, Kakamachi, Dadima, Lasuna etc.

The strict observance of dietetic rules and eating patterns, the wise use of staple food, selection of cooking oil, cooking utensils and cooking patterns determines the dietary health which in turn maintains the homeostasis of the body. Ahara is considered as Mahabhaishajya by Ayurveda as it helps in the maintenance of health

and reduce the chance of infections by strengthen the immune power of the body.

A proper sleep is necessary for the restoration of the health of the body after a hectic daily schedule in this era of industrialisation and urbanisation. An adequate and sound sleep for 6-8 hours is beneficial for Sukha (wellness), Pushti (nourishment), Bala (strength), Vrishata (potency), Jnana (knowledge) and Jiva (life or longevity). Inadequate sleep leads to Dukha (illness), Karshya (emaciation), Abalam (weakness), Kleebatha (impotency), Ajnana (ignorance) and Marana (death). Lack of sleep leads to increased vata which in turn leads to yawning, body aches, loss of concentration and digestion problems. By having proper and adequate nidra the person will be free from diseases, will have pleasure in mind endowed with strength, colour, complexion and virility.

During sleep sympathetic activity decreases while parasympathetic activities increase and therefore the blood pressure falls, pulse rate decreases, BMR falls by 10% to 20%, skin vessels dilates and activity of Gastro-Intestinal tract increases. It also affects the nervous system causing mental disorders like lack of concentration, insomnia, inability to concentrate, poor judgement, memory problems, mood disturbances, anxiety and disturbances.

The term Brahmacharya denotes control over senses, purity of manas and conducts towards goal to brahma. Brahmacharya includes complete absence of sexual desire or the practice of sexual continence. Brahmacharya includes complete withdrawal from eight forms of Mādhuna such as Smarana (remembrance),

Keertana (praising), Keli (foreplay), Prekshana (sighting), Guhyabhashana (secret talks), Sankalpa (deciding to have sex), Adhyavasaya (beginning of the act) and Kriya Nivruti (completing the coitus). Food is ultimately transformed into sukra and excessive loss of sukra leads to emaciation, formation of many diseases and even marana. Celibacy results in success, longevity rejuvenation. It is one among the best enhancers of longevity.

Sadvritta Palana

Sadvritta consists of the code of conduct that should be followed for the maintenance of health. Codes of conduct has been described related with the rules regarding hygiene, speech, diet, urges, relation with females, study, social relations and mental activities. Sadvritta Palana is considered as the main factor for the prevention of diseases. ^[3]

9. Avoidance of Prajnaparadha

The improper and unhealthy way actions done with the body, mind and speech is Prajna Aparadha. Prajna means intellect, Aparadha means faulty actions Prajnaparadha is Faulty actions done with intellect. Forceful suppression of urges like Urdha vata (eructation), Adhovata (flatulency), Purisha (faeces), Mutra (urine), Kshava (sneezing), Trishna (thirst), Kshudha (hunger), Nidra (sleep), Kasa (cough), Sramasvasa (strenuous breath), Jrumbha (yawning), Asru (tear), Chardi (vomiting) and Retas (semen) and forceful initiation of manasika vegas like Lobha (greed) Soka (grief), Bhaya (fear) Krodha (anger), etc

The current era is the era of technology or the era of paradigm shift. There is a paradigm shift in the occurrence of disease from communicable disease to the non-communicable diseases. The paradigm shift is also seen in house culture related to housewives from normal kitchen equipments to most modern mechanized machinery supportive Smart Kitchen including Washing machine, Grinder, Mixer Grinder, Refrigerator, Pressure cooker, Microwave Oven, Juicer, Electric Iron box etc. which reduced the physical activities of housewives to a great extent resulting in sedentary lifestyle.

The paradigm shift is seen in the work culture also which is shifted from normal land related jobs such as farming, fishing etc to computerized desk related white-collar jobs which results in very less physical activity. The play culture of kids had changed from outdoor games like cricket, football, hockey etc. to indoor computer-based video games.

The paradigm shift is seen in the food culture also which showed a drastic change from vegetables, fruits and legumes to junk fast-food culture. The cooking culture has also changed from normal mud, copper, steel-based vessels to Teflon-based and indalium-based ultramodern cooking vessels.

The sleep culture has changed over a decade that shows a paradigm shift from proper timely early-to-bed sleep to late night and disturbed sleep culture. The new unhealthy trends of life had been introduced to our lifestyle like smoking, alcoholism, drug abuse, illicit trafficking, sexual offences etc. The most advanced life consists of usage of electronic

social media such as Facebook, Whatsapp, Twitter, Telegram, Instagram etc in an unhealthy way. The unhealthy postures and unhealthy cultures also add to the group of unhealthy lifestyles which can be included under the heading Prajnaparadha.

The wrong utilization of different sense organs such as reading in dim light, hearing supersonic sounds not suitable for human ear, olfaction of offensive smell etc results in ill-health. The problems related with the wrong utilization of Kala results in the environmental hazards such as earthquake, floods, landslides, disastrous wind currents etc. resultant of human activities such as air pollution, water pollution, land pollution, biomedical waste, war related issues and non-human activities.

10. Adequate Practice of Panchakarma

Shodhana means bio-cleansing procedures which cleanses the body, removes the waste products and normalizes the vitiated doshas. Shodhana procedures are five in number and hence called as Pancha Shodhana. They are five in number and hence called as Panchakarma which includes Vamana, Virechana, Nirooha Vasti, Nasya and Anuvasana Vasti. Susruta elaborates Vamana, Virechana, Nasya, Nirooha vasti and Anuvasana vasti.

Vamana is the process of emesis with the help of medicine administered for inducing vomiting which is the main treatment for Kapha dosha. Virechana is purgation therapy induced after the administration of purgatives which is the main treatment for pitta dosha. The administration of medicated oil or ghee through

the nostrils is called Nasya which is the main treatment for Kapha dosha.

Nirooha Vasti is the administration of medicated enema prepared with Kashaya through anus which is the main treatment for Vata dosha. Anuvasana Vasti is the administration of medicated enema prepared with oils through anus which is the main treatment for Vata dosha. These bio-cleansing mechanisms help in maintaining the homeostasis and prevention of diseases. Scope of shodhana therapy is

- Promotive & Preventive Health care - To promote health of a healthy and to maintain health according to different seasons
- Rejuvenative Health care; Integral prerequisite of Rasayana Therapy and Kayakalpa
- Curative Management; Eradicate the disease by cleansing the channels in chronic disease
- Rehabilitative Health care; To suppress a disease process and to rehabilitate the patient

11. Proper practice of Garbhini paricharya for pregnant women^[5]

Garbhini Paricharya is the Ayurvedic care of the pregnant women which covers all health aspects of pregnancy including Ahara (diet), Vihara (exercise), Pathya (dos) and Apathya (don'ts). This antenatal ayurvedic care helps the woman to maintain the health of the baby and the mother, resulting in a healthy baby and healthy mother after pregnancy. Various advices prescribed month wise in Garbhini Paricharya is detailed below

- First month - Non medicated milk in desired quantity
- Second month - Milk medicated with Madhura Rasa drugs
- Third month - Milk with honey and Ghrita

- Fourth month - Navaneeta (Butter) extracted from milk or milk with butter
- Fifth month - Ghrita prepared with butter extracted from milk
- Sixth month - Ghrita prepared from milk medicated with Madhura drugs
- Seventh month - Ghrita prepared from milk medicated with Madhura drugs (same as sixth month)
- Eighth month - Kshira Yavagu mixed with ghee
- Ninth month - Anuvasana Basti with oil prepared with madhura drugs, Yonipichu (vaginal tampon) of this oil

12. Proper practice of Sutika paricharya for puerperal women

Care of the woman during puerperium come under the heading of Sutika Paricharya. It involves the following principles, Vatashamana, Agnideepana, Pachana, Raktavardhaka, Stanyavardhaka, Yonisanrakshaka, Garbhashayashodhaka, Kostashodaka, Dhatupusti and Balya, in which Sutika is given with aharas such as

- ✚ First 2-3 days -
 - Snehayogya- Snehapana in Mahatimatra with Panchakolachurna
 - Ushna Guda Udaka with panchakolachurna / Vataharaaushadhitoyapana
 - Sneha Ayogya- Above dravyas without sneha
 - Peya prepared out of Panchakolachurna / Vataharaaushadhi
- ✚ 4-7 days - Sneha Yavagu / Ksheera Yavagu
- ✚ 8-12 days - Jeevaniya, brihmaniya, Madhuravarga siddha hriddyaannapana
- ✚ After 12 days - Mamsa rasa

Vihara includes Rakshoghna Karma, Ashwasana, Abhyanga over Kukshi, Pristha, and Parshwa region and Samvahana in Nyubja Shayana, Udara Peedana, Udara Vestana, Ushna Balatailapurita Snana, Yoni Swedana, Ushnodaka Snana, Dhupana with kustha, guggulu etc.

13. Practice of Navajatha Sisu Paricharya and Rakshoghna Karma for newborn child.

Navajata Shishu Paricharya is the care of the new born baby. It includes Ulva - Parimarjana (Cleaning of vernix caseosa), Mukha Vishodhana (Oropharyngeal cleaning), Pichudharna (Tampon application), Nabhi-Nali Chedana (Cutting & care of umbilical cord), Pranapartyagaman (Resuscitation process), Garbhodaka Vamana (Stomach wash), Snana (Bathing of baby), Jatakarma (Feeding schedule of neonate and Rakshakarma (Protective measures). The Navajata Sisu paricharya helps in the prevention of diseases and maintenance of health thus resulting in the enhancement of immune power of the body.

Raksha Karma implies the protection of newborn by the antiseptics of beddings, clothing, and aseptic measures to prevent infections from surroundings. The twigs of adani, khadira, karakndu, pilu, parushaka should be hanged in the labour room (sutikagara), and sarshapa, atasi, tandula, should be scattered on its floor. A packet containing vacha, kustha, kshomka, hingu, sarsapa, atasi, lasuna, guggulu etc. should be hanged on the door and similar dravyas should be tied around the neck of mother and the child.

Acharya Sushruta directed the newborn to be wrapped in Kshauma (linen) cloth and made to sleep on a bed covered with soft linen. Twigs of Pilu, Badara, Nimba, Parushaka are to be used to gently fan the baby. A tampon impregnated with oil (tailapichu) should be applied over the baby's forehead daily. Fumigation with Rakshoghana drayas should be done in the Sutikagara. Vagbhata has also counselled use of herbs as Brahmi, Jivaka and Rishbhaka to be tied around hands or neck of the newborn. Vagbhatta also mentions use of Balvacha as it promotes medha, smriti, health and longevity of the baby.

From the above description, it is evident that with respect to Rakshakarma, Ayurvedic acharyas have advocated measures which aim to protect the newborn baby from various infections.

14. Immunity Programmes

The programmes aimed at enhancement of the immunity includes the following,

Ayurveda's Immunity boosting measures for self-care during Covid-19 crisis^[13]

The Prime minister of India Mr. Narendra Modi has listed Ayurveda's Immunity boosting measures as one of the seven tasks to fight against Covid-19 crisis. These recommendations were published by Ministry of Ayush and was based on Ayurvedic literature and scientific publications for preventive health measures and boosting immunity with special reference to respiratory health. The recommended measures include

1. General measures

🌸 Drink warm water throughout the day.

🌸 Daily practice of Yogasana, Pranayama and meditation for at least 30 minutes as advised by Ministry of AYUSH (#YOGAatHome #StayHome #StaySafe)

🌸 Spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) are recommended in cooking.

2. Ayurvedic immunity promoting measures

- Take Chyavanprasha 10gm (1tsf) in the morning. Diabetics should take sugar free Chyavanprash.
- Drink herbal tea / decoction (Kadha) made from Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Shunthi (Dry Ginger) and Munakka (Raisin) - once or twice a day. Add jaggery (natural sugar) and / or fresh lemon juice to your taste, if needed.
- Golden Milk- Half tea spoon Haldi (turmeric) powder in 150 ml hot milk - once or twice a day.

3. Simple Ayurvedic procedures

- Nasal application - Apply sesame oil / coconut oil or Ghee in both the nostrils (Pratimarsh Nasya) in morning and evening.
- Oil pulling therapy- Take 1 table spoon sesame or coconut oil in mouth. Do not drink, Swish in the mouth for 2 to 3 minutes and spit it off followed by warm water rinse. This can be done once or twice a day.

4. Simple remedies during dry cough/ sore throat

🌸 Steam inhalation with fresh Pudina (Mint) leaves or Ajwain (Caraway seeds) can be practiced once in a day.

✚ Lavang (Clove) powder mixed with natural sugar / honey can be taken 2-3 times a day in case of cough or throat irritation.

✚ These measures generally treat normal dry cough and sore throat.

5. Other measures

- Samshamani Vati 500 mg. twice a day with warm water for 15 days. The medicine contains aqueous extract of *Tinosporacordifolia*.
- AYUSH-64 - 02 tablets twice a day
- Agasthya Hareetaki - 05 gm twice a day with warm water
- Anuthaila/ Sesame oil 02 drops in each nostril daily in the morning (In case of nasal irritation, only swabbing the nostrils with Sesame oil may be done)

Advisories have been issued for the public to follow the personal hygiene and adopting preventive measures of simple remedies which are commonly used in controlling the respiratory symptoms and strengthening the immunity. Enhancing the body's natural defence system (immunity) plays an important role in maintaining optimum health.

Following system wise preventive and prophylactic simple remedies may be useful which are based on potential and strength of AYUSH systems for promotion of immunity and improvement in respiratory symptoms in similar diseases as documented by the research councils under Ministry of AYUSH.

Ayur Raksha programme

Ayur Raksha Programme is implemented by the Department of Ayush Government of Kerala to enhance the immunity of the people against Covid-19 disease attack. Ayur raksha

clinics were started all over the state of Kerala as a part of this Programme. Ayur Raksha clinics and Ayur Raksha Hospitals are aimed at prevention, management and rehabilitation of Covid-19 affected people. The Government Ayurveda Dispensaries and Private Clinics across the state are renamed as Ayur Raksha Clinics which provides basic preventive healthcare facilities through the supply of immunomodulatory medicines under the name Swasthyam and Sukhayushyam Projects.

Swasthyam project is implemented to provide preventive health care facility to persons below 60 years of age. The immunomodulatory medicines included under Swasthyam are Indukantham Kashayam, Vilwadi Gulika, Shadanga pana and Aparajita dhupa churna.

Sukhayushyam is the project implemented for preventive medicine facility to people above 60 years. Old age period is often associated with co-morbidities such as Diabetes, Hypertension, Renal disease, Cardiac disease, Cancer, Liver disease, Lung diseases etc. who are more vulnerable towards the attack of Covid-19 due to the immuno-deficiency period. The preventive medicine supply mainly includes Rasayana along with the medicine that can tackle co-morbidities during this period.

The medicines used in the management of COVID-19 mainly includes radical usage of Dasamulakatutraya Kashaya/ Drakshadi Kashaya/ Elakanadi Kashaya, Swasanandam Gulika/ Chukkumthipalyadi Gulika/ Sudarshanam Gulika, Agasthya Rasayana/ Chyavanaprasha, Vyoshadi Vataka/ Haridra khanda/

Thaleesapathradi Churna etc. according to the condition of the patient.

The rehabilitative care of the people who have recovered from COVID-19 are also done at Ayur Raksha Clinics under the 'Punarjani' project. The medicines used in Punarjani Project mainly includes Agasthya Rasayana, Chyavanaprasha, Kushmanda Rasayana and other medicines required for restoration of the health of the people.

'Amrutham' is the project implemented for the supply of immunomodulatory medicines to the quarantined persons in institutional and home quarantine facilities.

Ayur shield project and implementation of private ayurveda immunity clinic

Ayur shield is the programme aimed at implementation of immunity clinics in all the private Ayurvedic clinics across the state. The programme is implemented as joint venture of Ayurveda medical association of India, ayurveda medicine manufactures organisation of India, Ayurveda hospital management association. The immunomodulatory drugs are supplied through the immunity clinic started as a part of this programme.

SUMMARY

The essay entitled **"Immunity-Ayurvedic perspectives and practices"** consists of five parts- Introduction, Review of Literature, Materials and methods, Results and Discussion, Summary and Conclusion. **Introduction** part detailed the importance of immunity in COVID-19. This part explains the scope and background

of the study. The **literature review** section explains the Ayurvedic and modern perspective of Immunity including Vyadiksahmatva, Bala, Oja, Balvridhikara Bhavas etc. The **Materials and methods section** consists of data collection methods and techniques. **Results and Discussion:** The immunity enhancing practices includes the use of Rasayana, Swarna Prasha, Lehana, Prakara yoga, Karkidaka kanji, Achara Rasayana, Balanced diet, Adoption of Dinacharya, Ratricharya, Ritucharya, Trayopasthambhaand Sadvrutta, Avoidance of Prajnaparadha, Proper Practice of Panchakarma, Garbhini Paricharya, Sutika Paricharya, Navajatasisu paricharya, Rakshoghna karma and Immunity programmes such as Ayur Raksha and Ayur Shield programmes was collected. The discussion was done on the basis of collected data and conclusions were drawn. **Conclusion:** The Ayurvedic immunity practices are able to combat the emergence of new diseases like COVID-19.

CONCLUSION

Immunity has a pivotal role in the prevention of COVID-19. The immunity practices and Immunity self-boosting advisories collected during the study was utilized and it is the time for the Ayurvedic doctors to start Ayurveda Immunity clinics to prevent the emergence of infection. The Contribution of Ayurveda in the management of various communicable and non-communicable diseases have been substantiated. It has greater potential to address such situations through its wider concepts and treatment modalities.

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