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PANDEMIC VIEW

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Research Prospects in COVID-19

The unprecedented chaos created by the surge of COVID-19 is, in fact, a blessing in disguise as far as researches and publications in Ayurveda are concerned. The number of review articles published as well as a percentage of clinical trials registered in the clinical trial registry of India has been on the rise, particularly related to COVID-19.



Concept of Agantu Vikara

based on the different factors such as to cause, location, symptoms, severity of symptoms, prognosis and so on. In each of the classical textbooks, the different classifications are given scattered in various disease contexts. This bothers one as to the haphazard arrangement of such categorizations. But on close examination, one finds that these classifications bear a clue as to the effective understanding of the clinical picture of the particular disease and thereby facilitate proper management.



Dr Shanthi Ganga's
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Ayurvedic Management of COVID-19/SARS-CoV-2

A cluster of cases of pneumonia reported in a comparatively small province of China in last December eventually spread over the entire globe. Coronavirus disease 2019, also called COVID-19, a global pandemic resulted in significant morbidity and mortality worldwide. Not only the health sector also other sectors said to be the backbone economy were highly affected, but our previous lifestyle also became disrupted. Today we are living a new normal lifestyle. Till date lack of potent vaccine, complications and limitations of the existing medicine, aggravation of disease along with co-morbid conditions in elderly people are add on the burden of a pandemic. If we look into Chinese database current evidence shows that Chinese Traditional Medicine, as an adjunct treatment with standard care, helped to improve treatment outcomes in COVID-19 cases.

In India Ministry of AYUSH has set up an Interdisciplinary Committee for Integration of Ayurveda and Yoga Interventions and released 'National Clinical Management Protocol to combat COVID-19 especially focusing on mild-moderate cases. The selection of these drugs are based on published scientific evidence, literary research supported by scientific relevance and rationale in support of repurposing of these medicines in COVID-19 and outcomes and trends of completed and ongoing studies taken up by the Ministry of AYUSH on a large cohort across India. Even though it is said to be a new disease entity to the world it is not beyond the fundamental Tridosha Sidhanta of Ayurveda. The current Pandemic crisis leaves a post-pandemic scenario in which the patients may suffer from reduced immunity and body facilitate further infection. To regain Sareera Bala Rasayana therapy is necessary. As clear as a day Ayurvedic approaches are need of the hour. Unfortunately, a visible grapple is still existing between Ayurveda and modern practitioners regarding management strategies. Hope the ongoing evidence-based research outcomes will resolve and revive the future of Ayurveda.



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EDITORIAL DESK



KNOW YOUR HERBAL GARDEN

ELLU, SESAME

FAMILY: PEDALIACEAE

BOTANICAL NAME: SESAMUM INDICUM LINN

Ayurveda is a lifestyle which helps the person to maintain his health by using the inherent principles of nature. Its objective is to accomplish the physical, mental, social and spiritual well being by adopting preventive and promotive approaches. To attain this well being, some Charyas(regimen) are mentioned in the classics like Dinacharya, Rutcharya etc. Tila, the sesame seeds and its products have a pretty good role in this.

References of Tila can be found from the Vedic period itself. It was considered as an auspicious food and used in various rituals. Considering the Samhitha period, Tila Taila, gingelly oil was mentioned for abhyanga, Gandoosha, Sneha Pana etc. Most of the Ayurvedic preparations are having the base of Tila Taila. It increases the Bala (both physical and mental endurance), act as a Tridosha Shamaka (pacify vata, pitta and Kapha). The specific action of Tila can be observed from Twachya(good for skin) to Vaajikarana(aphrodisiac).

Ayurvedic Properties

Rasa : Madhura, Tikta, kashaya

Guna : Snigdha, Teekshna, Vyavayi, Sukshma

Virya : Ushna

Vipaka : Madhura

Karma : Tridosha shamaka, Keshya, Twachya, Varnya, Vrushya, Vranaropana, Rakta sthambaka, Medhya, Nadi balya

Useful Part : Seeds and oil.

Cultivation

- The climate of India suits for its cultivation, it requires a warmer climate.
- Sown during June-July or February - March
- Seeds are sowed directly in the soil. Water should be sprinkled in order to avoid drying.
- Harvested in October - November

Home Remedies

- **Pain in joints:** Cut the lime into small pieces, pack them in cotton cloth, put this into hot gingelly oil and foment the affected joint with this.
- **Dandruff:** Grind the leaves into a very fine paste and apply on the scalp.
- **For Aches:** Heat garlic in 2 tsp of oil and pour 2-3 drops in the ear

Therapeutic Use

- **Vishama Jwara (Intermittent fever):** Internal administration of Tila Taila with reason Kalka.
- **In Kasa(Cough):** For productive cough, Tila Kwatha with sugar, for non-productive cough, Hima preparation of leaves.
- **Mootrashmari:** Tilakshara with milk and honey
- **Arshas:** Svedana should be done with Tila Kalka and butter.
- **Kushta:** Intake of Tila and Shoditha Bhallathaka promotes digestion and useful over skin diseases and piles.

Chemical Constituents

- Arshas
- Rakta Pradara
- Ajeerna
- Shosha
- Atisara

Formulations

- Ellum Nishaadi Yogam
- Tilabhallathakadi Yoga

Researches

Antioxidant, Immunomodulatory, Haematol protective, Anti-cancer, Anti osteoporotic, Hepatoprotective, Anti-inflammatory, wound healing activities etc are proven by various researches.



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IMMUNITY TIPS

Nasyam and oil pulling therapies increase the strength of the upper respiratory tract.

RESEARCH PROSPECTS IN

COVID-19

AYURVEDIC PERSPECTIVE



IT HAS BEEN ALMOST A YEAR WITH COVID-19 IN AND AROUND OUR LIVES

Introduction


The world has changed dramatically with the onset and evolution of the pandemic. Since then, the humanity and medical profession is in pursuit of the best available solution for the uncertainties and miseries. The picture is not different or rather clearer in India with the indigenous medical systems trying their level best exploring the apt and adaptive weapons from their armoury against this new age pandemic. Ayurveda, being the frontrunner among the Indian systems of Medicine, plays the key role in contributing via both principles and practices for this fight against COVID-19. This article is an attempt to streamline these aspects of Ayurveda in the platform of research.

The unprecedented chaos created by the surge of COVID-19 is, in fact, a blessing in disguise as far as researches and publications in Ayurveda are concerned. The number of review articles published as well as a percentage of clinical trials registered in the clinical trial registry of India (1) has been on the rise, particularly related to COVID-19. The windows opened up by the public health demand for alternative therapy in recurrent epidemics have given momentum to the evidence-based Ayurvedic practices. The unique scenario created by the dynamic nature of COVID-19 is like that every system of medicine can contribute in one way or other for the containment of the multidimensional ill effects of the pandemic. In this context, it is inevitable not only to identify the updated and basic science-oriented management strategies from the treasures of Ayurvedic literature and traditional practices but also to develop them as evidence-based.

Historical review of the concepts

The immunology concept in Ayurveda can be seen evolved through the Brihatrayis. The concept of Bala as equivalent to Ojus can be traced down to the forerunner Susruta, solving out the differences in perception and perspectives regarding Bala in different contexts and different knowledge systems (2). Ojus is being highlighted thereupon in Susruta Samhita as the ultimate defensive power of the body; physically, physiologically and psychologically. In Charaka Samhita, the concept of Vyadhikshamatwa is being stressed upon. The dual-edged sword of Vyadhikshamatwa in fighting against the strength of the disease and in protecting the body from being infected upon operates in the body (3).

In the Ayurvedic perspective, not all the individuals are equally capable of resisting diseases. A well-balanced state of dosha, Dushya and Agni will only provide proper Sareera Bala which is responsible for Vyadhikshamatva. The key to health and disease does not lie in the application of drugs or special therapies but in the prime factors on which our life and vitality are based.



SORRY
WE ARE
CLOSED

COVID-19

The three most important ones in Ayurveda are food, sleep and sexual energy. These Thrayopasthambhas (Ahara, Nidra, brahmacharya) helps to attain proper functioning of Agni, dosha, Dushya and thereby maintains Ojus or Sareera Bala proper and is the key for Vyadhi-kshamatva.

Further Exploration of the Concept



This inclusive concept of Ojus, when scrutinized for its practical application in the current clinical scenario, one can visualize the need to categorize and pinpoint the activities taking place in the immune cascade under the fundamental (guna) and functional (karma) attributes of Ojus. Such categorization can add to the clarity of the topic and to the acceptance of Ayurvedic concepts and practices in the global scenario.

The physiological and pathological paradigms of health and disease diversities should be given priority while dealing with the immunological responses from an Ayurvedic point of view. The personalized medicine based upon tripartite responses has its root in these pathophysiological differences. The individual factors as well as the combination of different factors play very important roles in determining the manifestation, prognosis and treatment of a disease or a group of diseases. It is through this knowledge and application of systemic physiology and network physiology, that the holistic principles of Ayurveda regarding clinical immunology can be revalidated, updated and standardized.

Antiviral & Immunomodulatory Activities

Antiviral and immunomodulatory activities are a grey area as far as modern medicine is concerned. The one drug – one microbe – one disease theory of modern medicine doesn't consider the role of other immune factors, particularly which are part of innate immunity in a disease-specific background. Also, the fight against viruses revolves around vaccines and symptomatic support for the patients. Hence, exploration of the entire study reports in an internationally acceptable platform can add to the background work towards the development of Evidence-Based Ayurveda.

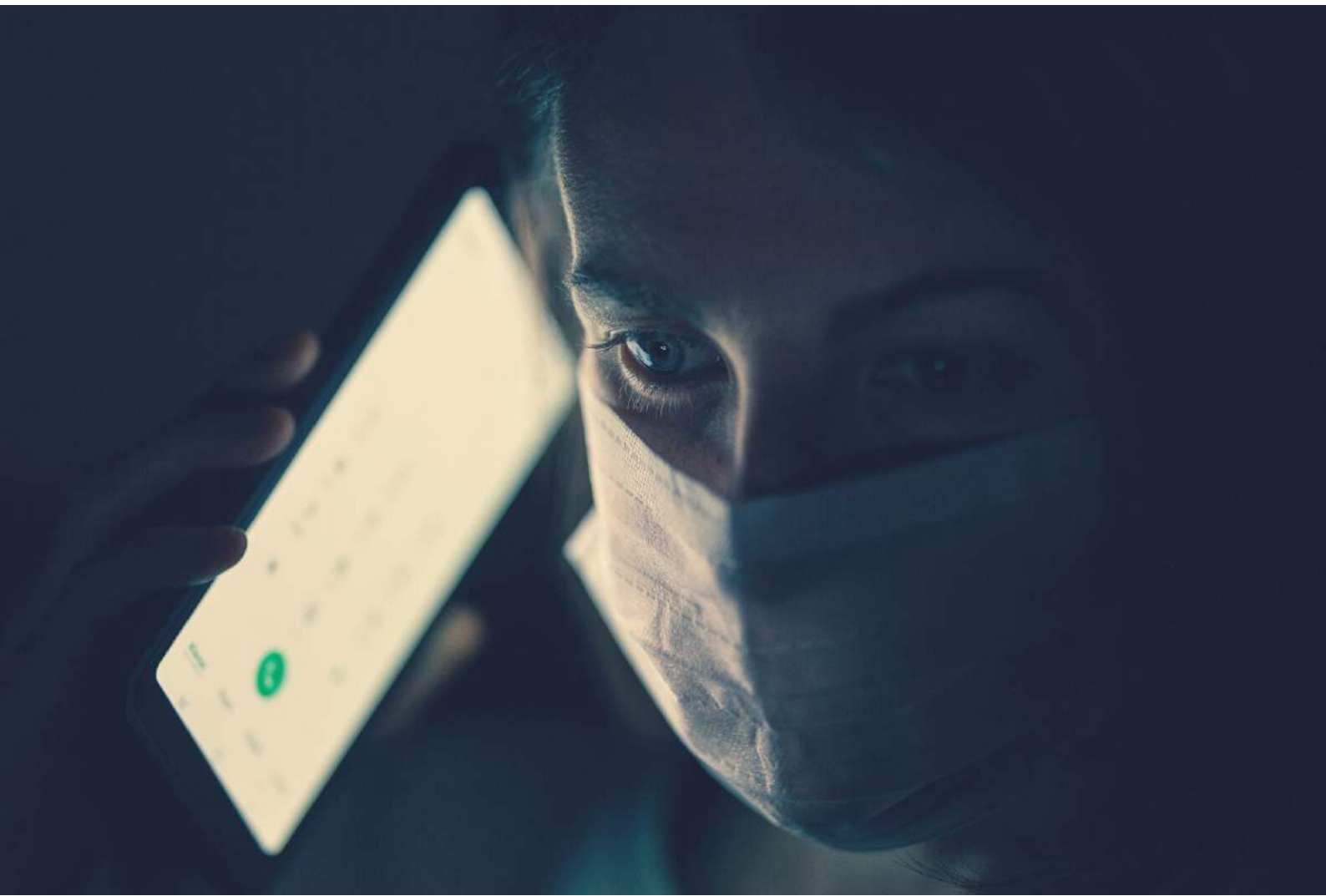
Table 1 – Summary of in vivo evidences of Ayurveda, from PubMed, in immunomodulatory and antiviral aspects

No	Drug	Evidence
1	<i>Tinospora cordifolia</i>	improves the phagocytic function without affecting the humoral or cell-mediated immune system (4) 25 kDa non-glycoprotein exhibiting lymphoproliferative and macrophage activation properties isolated from the stem (8)
2	<i>Ocimum gratissimum</i>	improves the phagocytic function without affecting the humoral or cell-mediated immune system (4)
3	<i>Hemidesmus indicus</i>	suppresses both the cell-mediated and humoral components of the immune system (4)
4	<i>Holarrhena antidysenterica</i>	stimulates phagocytic function while inhibiting the humoral component of the immune system (4)
5	<i>Aconitum heterophyllum</i>	stimulates phagocytic function while inhibiting the humoral component of the immune system (4)
6	<i>Curcuma longa</i>	significant upregulation of TNF- α and IFN- β mRNA expressions, suggesting their roles in the inhibition of H5N1 virus replication (5)
7	<i>Asparagus racemosus</i>	immunomodulatory activity on systemic Th1/Th2 immunity (6)
8	<i>Andrographis paniculata</i>	Antiviral activity against dengue and chikungunya viruses (7)
9	<i>Kanakasava</i>	possesses immune-stimulating potential that acts through the induction of lymphocytes for proliferation and IgM production (9)
10	<i>Shilajit</i>	dose-dependent inhibitory activity against HSV1, HSV2, HCMV, and RSV infectivity (10)
11	<i>Acorus gramineus</i>	Anti-Inflammatory Effects Through Decreasing Th1/Th2 and Pro-/Anti-Inflammatory Cytokine Secretion Ratios (11)
12	<i>Trachyspermum ammi</i>	immunomodulatory glycoprotein was isolated (12)
13	<i>Cissus quadrangularis</i>	antiviral activity of <i>Cissus quadrangularis</i> against HSV type1 and 2, and Vero cells at non-cytotoxic concentration (13)
14	<i>Azadirachta indica</i>	polysaccharides against poliovirus (14)

Table 2 – Summary of in silico, in vivo and clinical trial evidences of Ayurveda in immunomodulatory and antiviral aspects

No	Drug	Type of study supported	Evidence
1	<i>Withania somnifera</i>	In vitro and in silico	<p>Investigation for <i>Withania somnifera</i> immune modulation mechanism identified five bioactives that are capable of regulating 15 immune system pathways through 16 target proteins by bioactive-target and protein-protein interactions (15).</p> <p>Molecular docking analysis revealed withaferin A, withanone and withanolide A as effective withanolides against inflammatory target molecules. In experiments, withaferin A and withanone treatment had prominent suppressions on LPS-induced expression of pro-inflammatory cytokines in bone marrow-derived macrophages. Withaferin A regulated all the major four pathways (MAPKs and NF-κB) involved in innate inflammations (16).</p>
2	<i>Terminalia chebula</i> , <i>Terminalia bellerica</i> , <i>Emblica officinalis</i>	In vivo	<p>The neutrophil function tests and corticosterone levels were carried out in eight different groups of animals, namely control, <i>Triphala</i>, noise-stress, <i>Triphala</i> noise-stress, and corresponding immunized groups were used. Sheep red blood cells (SRBC 5 x 10⁹) cells per ml) were used for immunizing the animals that belongs to immunized groups. In <i>Triphala</i> administration (1g/kg/d for 48 d), Activity Index was found to be significantly enhanced in the <i>Triphala</i> group, while the remaining neutrophil functions and steroid levels were not altered significantly. However, the neutrophil functions were significantly enhanced in the <i>Triphala</i> immunized group with a significant decrease in corticosterone level was observed (17).</p>

3	<i>Abrus precatorius</i>	In vivo	The reduction of antibody titre, delayed type hypersensitivity response and the increase in phagocytic index indicates an inhibitory effect on the immune functions in mice (18).
4	<i>Aegle marmelos</i>	In vivo	Administration of methanol extract of <i>Aegle marmelos</i> (500 and 1000 mg/kg, p.o.) and <i>Ocimum sanctum</i> (100 mg/kg, p.o.), produced significant increase in adhesion of neutrophils and an increase in phagocytic index in carbon clearance assay. Low dose of methanol extract of <i>Aegle marmelos</i> was more effective for augmenting cellular immunity, whereas, high dose was more inclined towards humoral immunity (19).
5	<i>Curcuma longa</i>	In vivo	Many studies have demonstrated that curcumin suppresses pro-inflammatory cytokine production via inhibition of NF- κ B in macrophages. Further, the effects of curcumin in T follicular helper (TFH) cells and on Ab production during NP-ovalbumin immunization in mice was studied. The results revealed that curcumin administered daily significantly increased CXCR5+B-cell lymphoma 6+ TFH cells and CD95+GL-7+ germinal center (GC) B cells in draining lymph nodes. In addition, curcumin treatment in mice induced total Ab production as well as high affinity IgG1 and IgG2b Ab production (20).
6	<i>Fumaria parviflora</i>	In vivo	<i>F. parviflora</i> demonstrated significant ($p<0.001$) decrease in paw edema in carrageenan-induced paw edema method. It diminished the serum tumour necrosis factor- α (TNF- α), IL-6 and IL-1 levels and also significantly attenuated the malondialdehyde (MDA) levels.
7	<i>Shilajit</i>	RCT	20 HIV patients, randomly allocated into Treated group (<i>Shilajit</i> +ART) and Control group (ART). Treated Group responded better to ART both clinically and biochemically. The results show that decreases the recurrent resistance of HIV virus to ART and improves the outcome of the therapy (22).
8	<i>Bharangyadi Kashaya</i>	Clinical trial	Anti-histaminic, mast cell stabilizing and bronchodilator effect of hydroalcoholic extract of <i>Bharangyadi Kashaya</i> (23).
9	<i>Indukantha Ghrita</i>	Clinical trial	maintaining immunological homeostasis in relation with Upper Respiratory Tract Infections (24) and in patients undergoing chemotherapy (25).



Current Ayurvedic Practices & their rationale

The question, how far the current practice of Ayurveda follows the path of Evidence-Based Medicine, does not yield a promising result. Similar is the case with the relevant concepts and their interpretation in a clinical scenario. The Ayurvedic clinicians are often guided by beliefs and intuitions rather than scientific backup. This has to be gradually changed into a scientific platform so that we can at least speak about Evidence-Based Practices and Practice-Based evidence. The first and foremost step in this regard is to progress into good clinical practice and follow documentation guidelines.

When we begin documentation, background work on the current practices is inevitable. The current practices regarding the diagnosis, assessment, choice of medicine(s), dosage, timing, duration and adverse effects have to be kept under scrutiny. These factors, whether they have been carried over from a scientific background or not is the primary concern. If not, whether we can provide scientific solutions to correct them. By correcting them the percentage of science or evidence in practice can be upgraded. Then we can progress towards the rationalistic practice of medicine. Being a different area, Ayurveda has to develop its standards for this purpose in certain areas.



THE AYURVEDIC BIOLOGY OF IMMUNITY

In between philosophy and science, Ayurveda delivers its magical principles and practices for the benefit of mankind. Growing above the philosophical constraints, Ayurveda sometimes offers concepts that have to be incorporated as future science. In some other instances, Ayurveda offers philosophical solutions for some disease conditions which science cannot provide. Thus, Ayurveda has to develop a basic science as its own to deal with its principles and practices; but most importantly not contradicting with the current evidence or science. This system is often referred to as Ayurvedic Biology by eminent thinkers and scientists for the sake of purifying and updating Ayurveda adaptable in the current clinical scenario.

So, Ayurvedic Biology is not more than a scientific incarnation of Ayurvedic concepts. Removing the superstitious remarks embedded with the concepts and also identifying the misinterpretations done over these concepts are very important at this juncture. Immunology, also have an Ayurvedic Biology way of interpretation. First of all, Emerging from a philosophical background, Ayurveda considers every phenomenon caused by 3 types of causes – Samavayi Kaarana, Asamavayi Kaarana and Nimitta Kaarana. Immunity, as seen from the perspective of modern-day science also can have these 3 elements in it.

For a disease to occur, from the point of view of our body, its system is the primary culprit (Samavayi Kaarana), the relation of the body with the external factors is the secondary cause (Asamavayi Kaarana); whereas the pathogen, which has been highlighted by the modern science, is the tertiary cause (Nimitta Kaarana) only. This perspective will be changed when viewed from the point of view of disease or medicine, which makes Nimitta Kaarana as the most important one i.e., what occurs in a reductionistic approach. But, anyway, a sequential presence of all the three types of causes are essential for the origin of the disease.

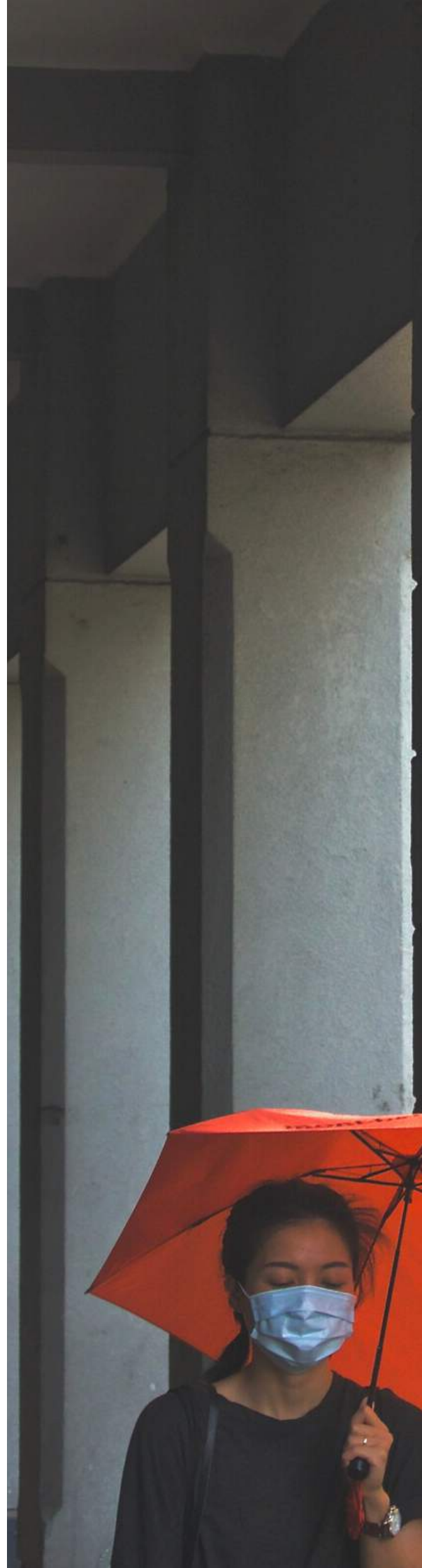
Moving further, the historical evolution of concepts from Ojus to Vyadhikshamatwa and then into Bala as well as the interactions between Dosha, Dushya, Agni and Ojus render the essential concepts of Ayurvedic Biology related to immunity. More precisely, the elements of the functioning of Tridoshas that provide resistance to developing the disease in our body should come into our mind while dealing with the Ayurvedic Biology of Ojus. Also, the support provided by Dhatus, the excretory tracts of defensive importance and the extension of digestive power into the body's defence mechanism should be there to complete the narration of the physiology of Ojus.

Role of Immunology in designing Ayurvedic Public Health Programmes

Public Health Delivery system, when related to immunology, has often been restricted to vaccination programmes. Hence, the scope of Ayurveda is being unexplored or being misinterpreted as 'immunity suppliers'. But the physiological fact is that supplying immune reagents in the form of herbal preparations without understanding the basic immune mechanism can backfire on the entire Ayurvedic practices on immune-related disorders.

So, designing an Ayurvedic health care programme requires the application of physiological response of the body in Ayurvedic and Modern (together called as 'holistic' as already mentioned) perspectives rather than seeing the chemical components of the drugs and extrapolating their combined immuno-modulatory effects. For example, a familiar medicine in the form of Vilwadi Gulika can be used as a preventive medicine; but when it is used in the same dosage as needed for curative correction, it can hamper with the body's immune mechanism and can affect negatively on the immune response when the disease process is developed later. Instead, if it is used in a reduced dose say 1 or $\frac{1}{2}$ tablet daily, it can have its 'immune booster' effect. The principle is the same as that of providing the eustress effect to make the body to respond in a better way.

Also, when a mass programme is being conducted for the preventive purpose, say Vamana in the Ritusandhi to prevent the outburst of Kaphaja disorders in Vasanta Ritu, it should be never like cutting off the nose to spite the face. The benefit-risk ratio should be thoroughly analyzed before advocating such programmes. The quantum of benefits may sometimes be outplayed by the risk of complications and practical adversities. Hence, the Kaphasamana effect of Nasya can be seen as a better advisable measure to be practised as a mass sensitization programme for prevention of allergic outbursts in Vasanta Ritu, when compared to the sensitivity and specificity of Vamana as a preventive procedure in the same cases.





Ayurvedic strategy for prevention, treatment and rehabilitation

Originated from the gems of Ayurvedic Biology, evolved through the health economics behind Public Health Programmes, Ayurvedic preventive measures have to be redefined and revalidated before implementation. There is no classical reference to give medicine to prevent disease. Prevention is acquired classically by diet and lifestyle regimens. But, we can rationally and scientifically use medicines which are nearer to diet. i.e., the difference between diet and medicine is that diet is rasa predominant and medicine is Veerya predominant. The predominance of Veerya makes the medicine as Viseshya when the diet is Samanya. If we select drugs having less potency for preventive purpose, there is no scientific or ethical issue. Apart from the choice of medicine(s); dosage, duration and adverse effects are also important. It is easy to consider preventive measures as equivalent to some principles of crime and law.

Every crime has the aptest punishment. A punishment of lesser severity can reduce the gravity of the crime. Whereas a punishment of greater severity than needed is an injustice. Punishments of lesser severity such as sending the suspected to moral classes, giving small penalties and keeping in custody for some time can be used to prevent crimes. But lifetime imprisonment or hanging to death cannot be considered as a measure to prevent crimes. Similarly, when medicines are given to prevent diseases, they should be the ones with lesser Veerya and lesser reactions, in a lesser dose for a minimum period (7 to 21 days). For example, drugs like Guloochyadi kashaya, Drakshadi kashaya, Shadanga, Sudarsana, Vilwadi Gulika etc are such drugs with lesser severity. Also, Toyakalpna is preferable compared to kashaya to reduce the gravity and increase the palatability, user-friendliness and reachability to the community. When it comes to treatment strategy, the apt medicine based upon dosha dominance and Dhatu-mala status are preferable. Here, also complications of the disease and drugs should be kept in mind while designing a treatment protocol. For example, the cytokine storm affecting the lungs in case of COVID-19 makes the drugs like Kanakasva contraindicated in such cases as the Teekshna nature of the drug may worsen the condition. The principles of preventive Ayurveda can be more or less followed in the rehabilitation phase also since secondary prevention is one of the objectives. Also, the Dushya being complicated should be given preference and drugs having Rasayana property can be used to repair them.



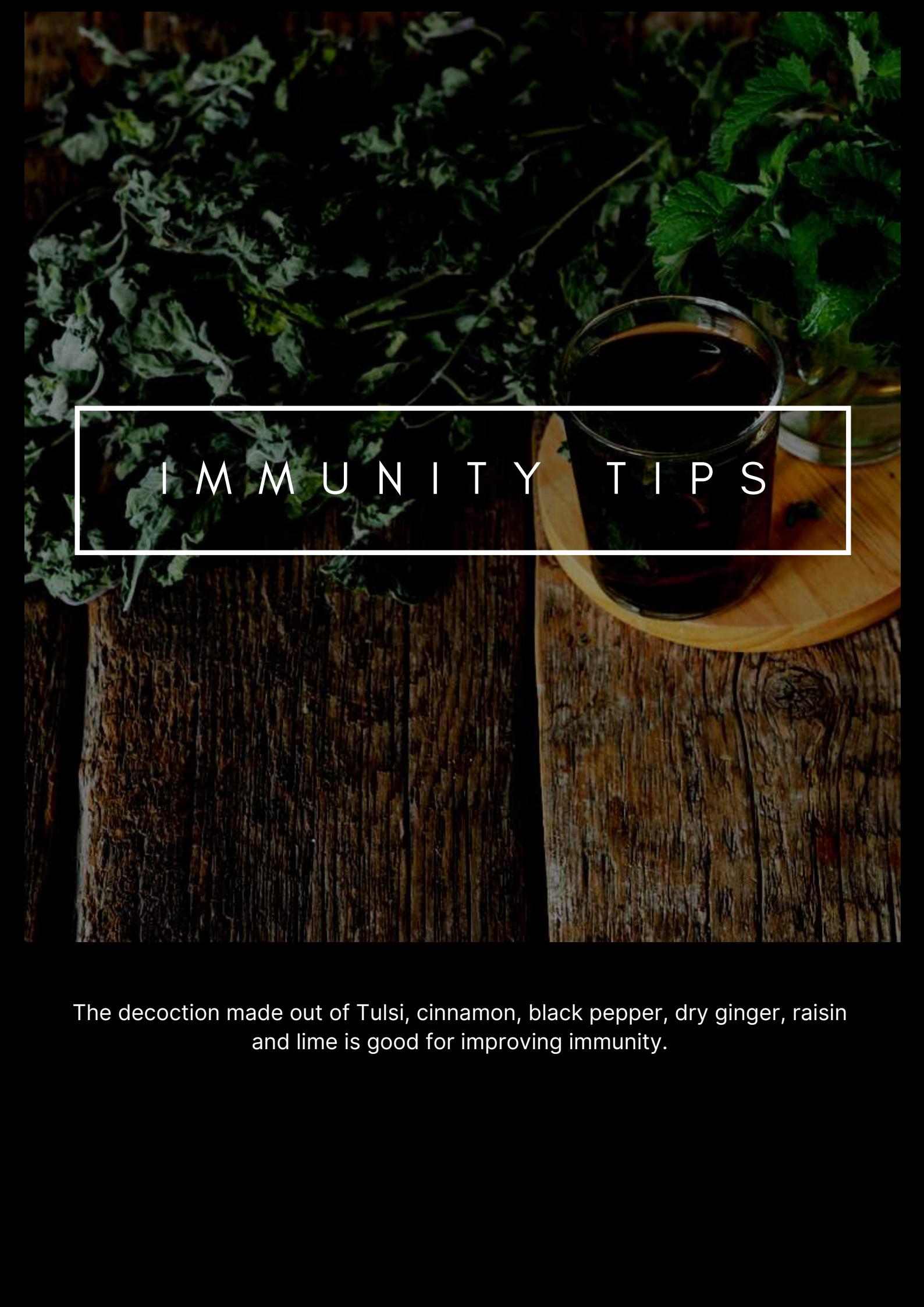
Conclusion

Whether Ayurveda is equipped enough to fight against various infectious diseases in the form of epidemics, is a million-dollar question unanswered for decades. The lack of researches in the right direction coupled with the absence of scientific integration of knowledge systems seems to be the culprits behind this. A thorough understanding right from the conceptualization up to the drug delivery systems can solve the issues of uncertainty regarding the role of Ayurveda in immunity and thus in infectious diseases. This will enable Ayurveda to have its holistic and integrative strategy to provide better preventive, curative and rehabilitative dimensions, especially under the circumstances of Covid19 pandemic wave embracing the entire world in an unforeseen manner.



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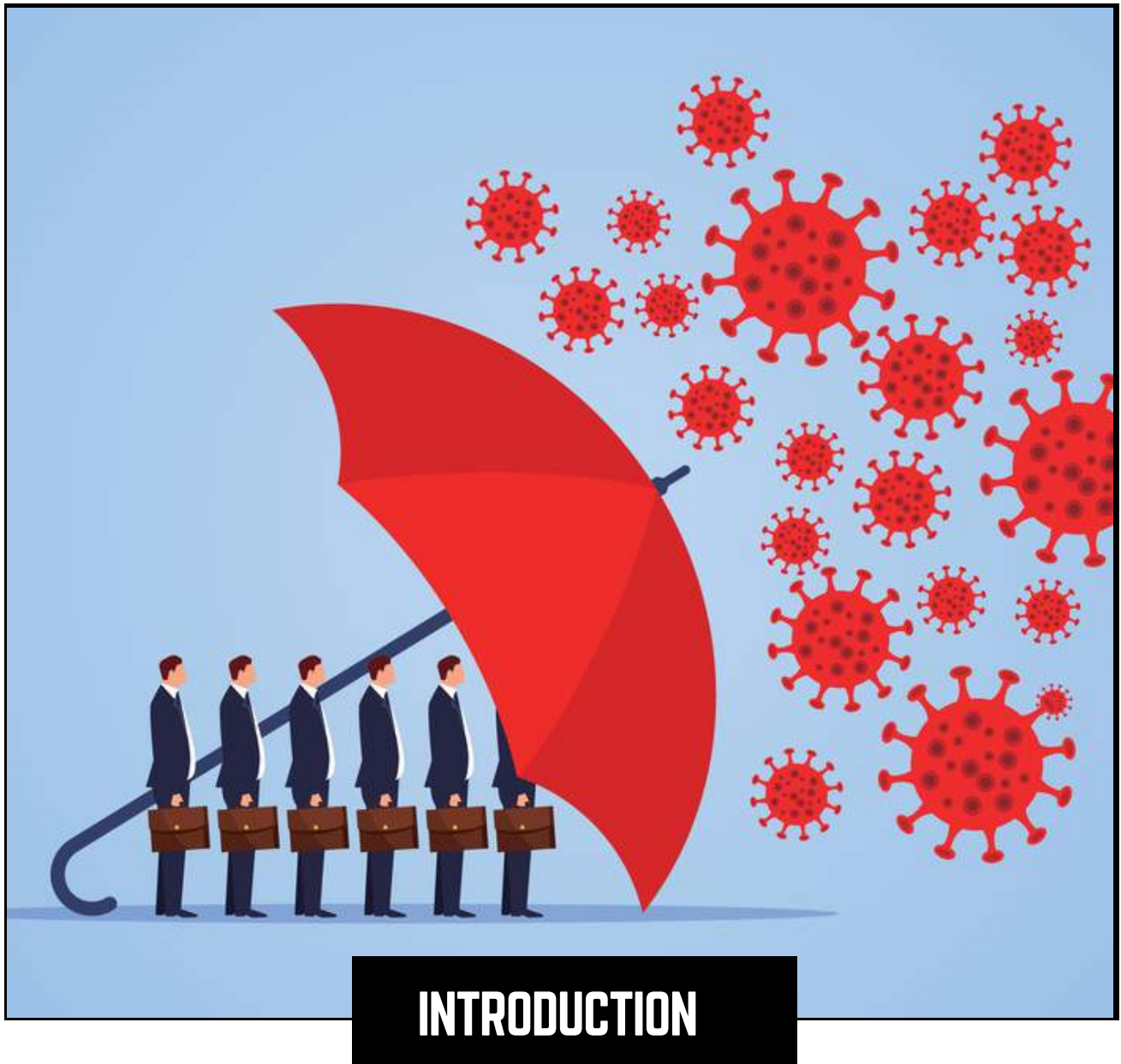
A glass of dark decoction on a wooden tray with fresh herbs in the background.

IMMUNITY TIPS

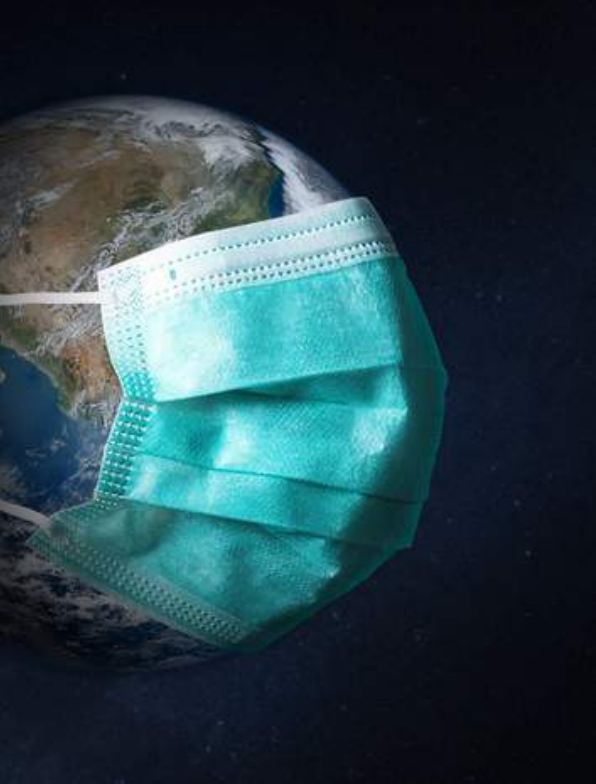
The decoction made out of Tulsi, cinnamon, black pepper, dry ginger, raisin and lime is good for improving immunity.

The Concept of **AGANTU VIKARA**

—
A SYSTEMATIC REVIEW IN THE LIGHT OF COVID- 19



The classification of diseases helps in a more systematized understanding of the disease. One can find manifold classifications of the diseases in the science; based on the different factors such as to cause, location, symptoms, severity of symptoms, prognosis and so on. In each of the classical textbooks, the different classifications are given scattered in various disease contexts. This bothers one as to the haphazard arrangement of such categorizations. But on close examination, one finds that these classifications bear a clue as to the effective understanding of the clinical picture of the particular disease and thereby facilitate proper management.



Nija and Agantu Vyadhi are one such category based on peculiarities in the etiopathogenesis. The pandemic, COVID-19 is a zoonotic infection with symptoms ranging from mild or asymptomatic case to severe ARDS resulting in mortality. In spite of effective symptomatic treatment, there is a dearth of conceptual understanding of the disease, which will provide new insights, both in the management and future biomedical researches. In the present article, we have made an effort to understand the concept of Agantu Rogas in light of the present pandemic of COVID-19.

MATERIALS AND METHODS

A thorough search of the Ayurvedic literature, Sanskrit lexicons and peer-reviewed PubMed indexed articles has been carried out to obtain the necessary information. The references have been taken from the existing Ayurvedic textbooks like Astang Sangraha, Caraka Samhita, Susruta Samhita, Madhav Nidana, Astang Hridaya, and Sanskrit lexicons like Sabdakalpadruma and Amarakosa. The details pertaining to COVID-19 had been taken from peer-reviewed articles from PubMed indexed journals.

AGANTU- THE TERM

The terms Nija and Agantu are to be understood separately for a better understanding of the meanings. The term Nija is derived from the root 'ni + ja'- Nitaraam Jayate- which means, that which is innate, or produced by oneself. Another definition says- Niyathasthu Jayathe Iti Nija- that which will certainly occur. On the other hand, Agantu has been derived from the root 'a +gam+ tun' which denotes any event that is exogenous (atithi) and occurs unprecedentedly (Aniyata). In Ayurveda, the term Agantu has been used both in the context of roga(Nija- Agantu) as well as dosa(Sthani- Agantu).

CLASSIFICATION OF THE ROGAS

Acarya Vagbhata, in the first chapter of Astang Hridaya divides the entire spectrum of diseases into two types - Nija(endogenous) and Agantu(exogenous)(1). These are further classified as Sareera and Maanasa based on their Adhistan (seat)(2). Thus broadly the diseases are of four types- Nija- Sareera, Nija- Maanasa, Agantu- Sareera, Agantu- Maanasa. In Caraka Samhita Sutrastana- 8, the rogas are broadly classified as three- Nija, Agantu and Manasa in origin(3).

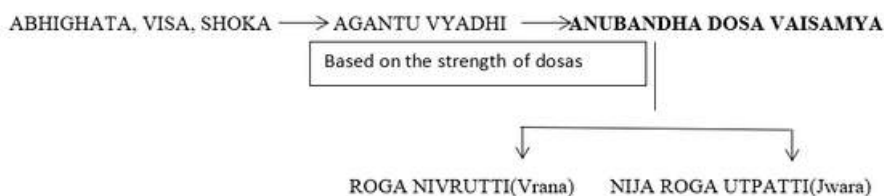
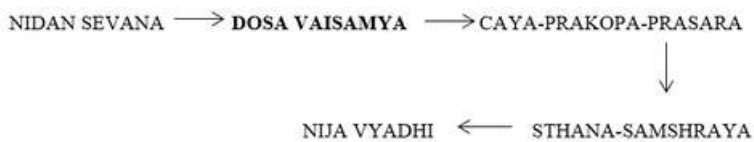


On close examination, one finds that the separate status of Manasa rogas points to the duality of endogenous(Nija) and exogenous(Agantu) causes in their occurrence. In the subsequent chapters in Vimanasthana, he further clarifies that based on Nimitta or cause(4), diseases are of two types only- Swadhatuvaishmya Nimitta (Nija) and Agantu indicating that Manasa rogas falls under any of the above subtypes. Agantu rogas are the diseases whose occurrence follows exposure to external factors like Bhuta(unknown environmental factors), visa(plant, animal and mineral toxins), Vayu (polluted air or natural calamities like cyclones), Agni(fire, burn-injury, hot springs or volcanic eruptions), Kshata(physical assault), Bhanga(trauma following fall or bondage) and similar causes. Vagbhata further extends the aetiology to encompass psychological stressors like raga(passion), Dwesha(hatred), Bhaya(fear) and Soka(misery)(5).



NIJA AND AGANTU VIKARAS

The Nija- Agantu classification of rogas is based on two factors- Sannikrishta Nidana and Vidhi Samprapti. Sannikrishta Nidana refers to any causative agent that plays an inevitable role in the manifestation of the disease. In Nija rogas, dosa vitiated by its etiological factors follows the natural course of Sancaya- Prakopa- Prasara and causes the disease. So, dosa Vaishmya is the Sannikrushta Hetu. In Agantu rogas, unprecedented exogenous factors like Abhighata precipitate the disease followed by association with dosas. The fate of the disease (resolution/progression) depends on the strength of the Anubandha dosas. Thus here, the exogenous insult itself is the Sannikrishta Nidana. Both in Nija and Agantu rogas, dosa Vaishmya is invariably present, but the sequence (krama) in which it develops vary. This is denoted by Vidhi Samprapti.



AGANTU JWARA- A VARIED PICTURE

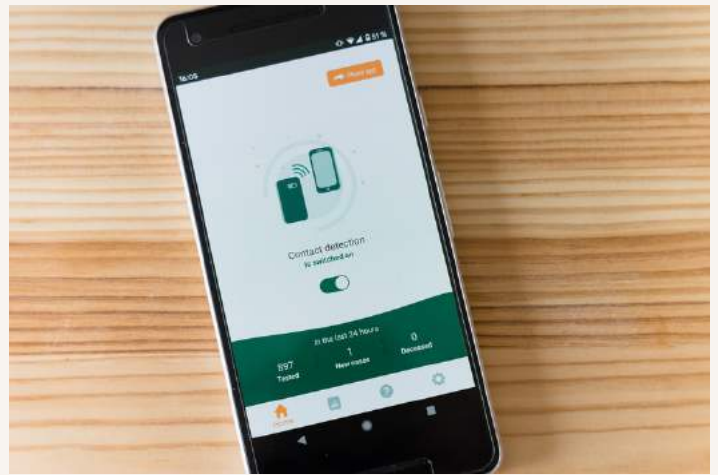
Caraka clearly explains the concept of Agantu roga in the context of Jwara. Agantu Jwara is sub-classified as Abhigataja, Abhisangaja, Abhisapaja, and abhicharaja.

Abhigataja Jwara- Fever that arises following an external physical trauma to the body. Here, following injury, there is vata Prakopa which gets localized in the rakta dhatu producing fever with localized pain, swelling and discolouration. The term 'Prayena' signifies the involvement of other Dhatus too, though to a lesser extent. Physical trauma invariably involves cell injury and release of chemical mediators of inflammation. Depending on the extent of cellular damage, the development of a systemic inflammatory response constituting fever is not uncommon. Fever due to traumatic brain injury is notorious for its grave prognosis.

Abhisangaja Jwara- Occurs due to Sanga or association of the body with Graha, mano Vikaras like kama, krodha, soka etc and poisons of varied aetiology. In Grahavesha, there is sannipata dosa prakopa depending on which among the Grahas gets involved. In Jwara due to kama, soka and bhaya, there is associated vitiation of vata, whereas in krodhaja, there is vitiation of pitta. Here, kama-Krodhadi mano vegas, even while arising within an individual, is in response to an undesirable external stimulus, hence termed as Agantu. This can be considered as the earliest reference of a psychosomatic illness in any medical literature. Similar pathogenesis should be understood in the occurrence of Bhayaja Atisara and Dwishtarthaja cchardi as well. Thus, psychiatric illnesses of mood and affect can give rise to profound systemic symptoms due to somatization. The concept of grahavesha remains obscure and unexplored, hence beyond the scope of this paper. Vishaja jwara occurs following exposure to poisons of varied origin- plant, animal, environmental pollutants, surface irritants and so on. Depending on the agent-host interaction, the associated symptoms varies between- localized inflammation to systemic features like diarrhoea, vomiting, breathlessness, syncope and death.



By the term 'Anya Visa Sambhava' Caraka leaves scope to expand the purview of visa to the modern-day microbial infections.



Abhicara-Abhisapa Jwara is characterised by high-grade fever, which increases day-by-day and gets associated with systemic symptoms until the person succumbs to death. The cause mentioned as curse or witchcraft denotes an idiopathic occurrence. In the present times, the term pyrexia of unknown origin (PUO) has been conferred upon cases which present with a persistent fever above 100°F, evades diagnosis for at least three weeks including one week of investigation in the hospital¹¹. Though with the development of accurate diagnostic tools and techniques, the underlying causes are unmasked eventually, the cases largely remain undiagnosed, especially in the developing countries owing to the financial burden. Thus, even today, the widespread belief of abhicara jwara and their tantric remedies are prevalent in rural India. As a concluding remark, Caraka emphasise the pathogenesis of agantu vikara as- the external insult alone gives rise to the disease, which later on gets associated with vitiated dosas and produce symptoms of nija roga (nija vyamishra lakshana). Depending on the strength of the involved dosas, there may be a spontaneous resolution or progression of the disease.

COVID-19- ABHISANGAJA JWARA

There are no direct references to infectious disease pathology in the classical Ayurvedic literature. The notions like Aupasargika rogas, krimi even when points towards disease transmission do not encompass the spectrum of a pandemic. Janapadodhwamsa is an entirely different concept where the adverse environmental factors like air, water and land in a particular location caused mass destruction of the population and make it unfit for further habitation. This probes one to consider the concept of visa, where stage-wise symptomatology of various plant, animal and mineral poisoning are explained along with their management. The microbial antigens and endotoxins can cause symptoms similar to poisoning.

SARS-CoV 2 is a beta coronavirus possessing positive-sense single-stranded RNA and a diameter of 70-140 nm. It infects the host through a five-step process- attachment, penetration biosynthesis, maturation and release. Coronaviruses possess four structural proteins namely- Spike (S), membrane (M), envelop (E) and nucleocapsid (N). Of these, the S protein is shown to get attached to the ACE2 receptors in the lung epithelial cells and initiate the disease process. ACE2 receptors are also abundant in other sites like heart, ileum, kidneys and bladder, but so far, no studies have proved their involvement in the pathogenesis. The ACE2 receptors are expressed on the apical side of the epithelial cells in the alveolar space, hence, the most probable portal of entry and destruction. Epithelial cells, alveolar macrophages and dendritic cells (DCs) are three main components for innate immunity in the airway. Alveolar macrophages are present in the apical side of the epithelial cells and dendritic cells reside beneath the endothelium. These cells phagocytose the apoptotic cellular debris containing the viral antigen and present them to the T cells. This is followed by a cascade of immunological responses, which, in excess causes, a delayed hypersensitivity reaction called Cytokine storm. The systemic inflammatory response that ensues causes widespread cellular damage, multi-organ failure and death. Unlike the initial presentation, there has been an increase in the number of asymptomatic cases recently. Interestingly, even in asymptomatic patients, CT-Thorax shows characteristic ground-glass opacification¹⁸. This reinforces the principle that the strength of dosa vitiation in the body determines the fate of the disease. With no definite cure, an array of medications and procedures are being employed to sustain the life of the affected. Potential antiviral drugs, immune modulators like DMARDS, IL-6 inhibitors, anti-coagulative drugs and artificial ventilator supports remain the mainstream of management. With the healthcare buckling under the rising death tolls, there is an urgent need for the development of curative medicines. In India, the second-most populous country in the world, the death figures are well within 1 million, owing to the integrated health approach. The CAM like Ayurveda, Homeopathy, Siddha and Yoga has equally shouldered the disease burden to achieve such a miraculous result. In Ayurveda, the treatment principles of jwara, swasa, atisara and rasayana are being popularly employed. The branch of Agada tantra opens a scope for effective management of such emergencies and is yet to be explored. Thus, the management ought to include -

- Samprapti vighattana- Visa chikitsa, lakshanika cikitsa like jwaraghna, swasahara, atisarasamaka,
- Prakruti vighata- by nidana parivarjana and patyaahara-acara seva
- Oorjaskara cikitsa- by means of rasayana cikitsa.

CONCLUSION

The manifold classification of Vyadhi is not merely a theoretical entity. A clear-cut understanding of the rationale behind such concepts provides an edge in the intervention. Health crisis like the present one, while challenging the healthcare system, also provides an opportunity to explore our science and deepen the understanding. It is evident that Ayurvedic concepts are eternal and even though new disease entities are arriving day by day the fundamentals of Ayurveda remains the same. This is the understanding of Ayurveda.



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JEWELS OF AYURVEDA

“ĀROGYAKALPADRUMAM”

A COMPLETE COMPENDIUM ON CHILD HEALTHCARE

Ārogyakalpadrumam is not an unpopular text, especially in Kerala's Ayurvedic community. But this popularity is often limited to a few of its medicinal preparations. It is less known as a text that has comprehensively contributed to all the domains of Ayurveda. It is an epitome of the expertise of the Kerala Vaidyas, who have meticulously documented their observations and knowledge, adding to the existing wisdom in Ayurveda. Ārogyakalpadrumam has its own hallmarks, be it principles, etiology of diseases, symptomatology or their management.



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AUTHOR, REGION, PERIOD AND SCHOOL

The author of Ārogyakalpadrumam is the illustrious Kaikkulangara Rama Varier, who was paramount in the vernacular and Sanskrit literature of Kerala. He was born in 1832 at Thalappilly, Thrissur in Kizhakke Waryam, to Narayani Warasyar, and Kaithakkott Narayana Bhattathari. He led a nomadic life, and was under the tutelage of various Gurus like Thrippunithura Kovilakam Putiyedath Govindan Nambiar, and later under Yogananda Swami at Kumbala. He has written many books, the exact number of which is controversial. There are at least 40 texts that have been attributed to his name. They range from Āyurveda, to Saṅgīta, Sā mudrikaśāstra, Jyotiṣa, Kāvya, Darśana, etc. He has written two commentaries for Aṣṭāṅga Hṛdayam named Bhāvaprakāśa and Sārā rthadarpaṇa, and independent texts Ārogyakalpadrumam, Vaidyāmṛtatarāṅgiṇī, and Netracikitsā.

His name is an important one in the history of print press in Kerala. He transcribed the palm leaf manuscripts of the Adhyātma Rāmāyaṇa of Tuṅcattēzhuttaccan for the first time. It is considered a pivotal reason why the text gained immense popularity in Kerala. He has also taken several books like Śrīkṣṇavilāsaṃ, Māgham, and Raghuvamśam to the press. His very famous non-medical texts include commentary on Horāśāstra (Jyotiṣa), Bālaprabodham and Amarakośa Bālapriya Vyākhyā (Samskṛtam). His role in popularizing Samskṛtam among the masses of Kerala, and efforts in establishing the presses Vidyāratnaprabhā and Kerala kalpadrumam have always been remembered. His demise, as per the records available, is on October 5, 1894. The place of death is also ambiguous.

Anubandhacatustayam

Adhikāri: The beneficiaries of the knowledge in this text are the ones who aren't wise enough to extrapolate the wisdom from the earlier or classical texts to the context of treating children. The formulations mentioned in the text are primarily intended for children, but they are safe and effective in adults too.

Viśayaḥ: The branch of Bālacikitsā which has already been mentioned concisely by the Vrddhavaidyas.

Prayojanaṃ: Understanding the physiology and its dynamism in children, neonatal care (with more specificity in guidelines than previous texts), vivid manifestations of diseases and therapeutic considerations in children on the basis of age.

Sambandhaḥ: The book serves as a ready reference on various aspects of health and disease of children and helps the Balacikitsaka to be quicker and precise in diagnosis and treatment.

The Uniqueness of the Text

The writing method of the text is exemplary in many ways. Rāma Wārrier seems to have taken care of multiple aspects: For the universal acceptance of the text even among non-Keralite readers, the text has been written exclusively in Samskṛtam language but Malayalam script. For easy memorization, the whole text follows the same meter, Anuṣṭup. The ślokaś of the formulations taken from other texts have also been paraphrased with or without modifications in content, making the text original and plagiarism-free.

HETU

The age classification in the text is unique, and also crucial since children belong to an age group that drastically varies within itself. Children are classified into eleven on the basis of age. This classification decides the dosage of medicine, and even the preparation methods of medicine, and Prākāra Yogas (medicines for the preservation of health and prevention of diseases in children).

Newer etiologies, though less in number, have been added to the existing knowledge. For example, suppression of urges originating from Apāna Vāyu has been added to the etiology of the absence of breastmilk. Affliction by grahas has been identified as an additional etiology of Apasmāra.

LIṄGAM

Symptomatology is one of the areas where the greatest contributions have been made by Ārogyakalpadrumaṃ. A lot of dermatological manifestations have been documented under the heading Visarpa. Often, the name of the disease is indicative of a dermatological presentation (Eg: Tilavisarpa – Resembling sesame seeds in appearance), but there are several associated systemic manifestations with them like fever, vomiting, etc. Hence, they ought to represent skin ailments associated with systemic illnesses.

There are 51 Visarpas, of which eight subdivisions of Vātika, sixteen of Paittika, twenty-one of Kaphaja are unique to Keraḷan texts. Similarly, eighteen Apasmāras which include a multitude of epileptiform manifestations including febrile seizures, and Rakta-anavastha wherein the myriads of edematous manifestations have been enunciated. Vātarakta is given the name Raktastambha, and is said to share similar pathogenesis with Kuṣṭha, both resulting due to the occlusion or stambha of Rakta. Abscess like manifestations has been separately included under the name Kuṇḍālaka. The internal ulcers of stomach or Jaṭharavraṇa have been mentioned and characterized by crying that aggravates on touching stomach, discolouration of the tongue, greenish engorged vasculature and rigidity in the stomach, fever and diarrhoea.

AUṢADHAM

Unique contributions have been made by Ārogyakalpadrumaṃ in both the genres of treatment principles as well as therapeutic formulations and procedures. Treatments have broadly been divided into health-preserving and disease-curing. In children below 15 days of age, Hetuviparīta treatments have been indicated and Vyādhiviparīta management contraindicated. In chronic and refractory cases of breast milk absence or inadequacy, Vāta anulomana has been advised. Vātavyādhī cikitsā chapter begins with a detailed description of Śāṣṭika Annalepana, which is specially indicated for children in Śīrassekādividhi too. One of the authentic references of Patra Poṭṭala Sveda is also from the same chapter.

Locally available drugs have also been added to the treatment options. When the child is fed with kinds of milk other than breastmilk, it must be compulsorily boiled with Bhadra (Aerva lanata) or Bṛhati (Solanum indicum) or the classically mentioned drugs like Sthirādvaya and must not be administered otherwise. Similarly, Pārantī (Ixora coccinea) has been profusely used in Rakta-based pathologies. Many of the diagnoses like Visarpa, Raktānavastha, etc. mentioned earlier are given individual and stage-wise therapies, among which single drugs and simple combinations are abundant. This can contribute to precise and effective interventions in precise diagnoses. Eg: Gopātmajāmūla (Hemidesmus indicus) in Tilavisarpa and Śatapušpā (Anethum graveolens) in Dhānyavisarpa are to be made into a paste with coconut milk and applied.

The formulations that are already present in other texts have been adopted sometimes as such and sometimes with modification in contents or modification in indications. One example for each:

Nayopāyaṃ Kaṣāyaṃ, indicated in Śvāsa and Hidhmā, traditionally follows the ratio of Bala:Jīraka: Nāgara as 6:4:2. But when taken into Ārogyakalpadrumaṃ, it has been modified as 10:1:1. This must have been done keeping the pediatric patients in mind, to reduce the Āgneya, Tīkṣṇa properties of the formulation.

The popular yoga called Cukkiliraṭṭyādi or Guḷaśuṇṭhi has only two indications that is Kāsa and Śvāsa in its traditional Malayalam verse. But in Kalpadrumaṃ it has additional indications like Aruci, Urahkṣata, Gulma, and properties such as Agnikṛt, Balakṛt, and Varṇakṛt. Several other formulations which are common in practice like Dhānvantaraṃ guṭikā, Śvāsānandaṃ guṭikā, and Vaiśvānara Bhasmaṃ (Śūla) have been mentioned in Ārogyakalpadrumaṃ. The Samskṛtaṃ version of Sahasrayogaṃ has taken the ślokaṣ of many formulations (Eg: Abhīrukandādi kaṣāyaṃ, Amṛtāṣṭādi kaṣāyaṃ, etc.) as they are in this text, but there is no sufficient chronological evidence to establish that they are original contributions of the author.

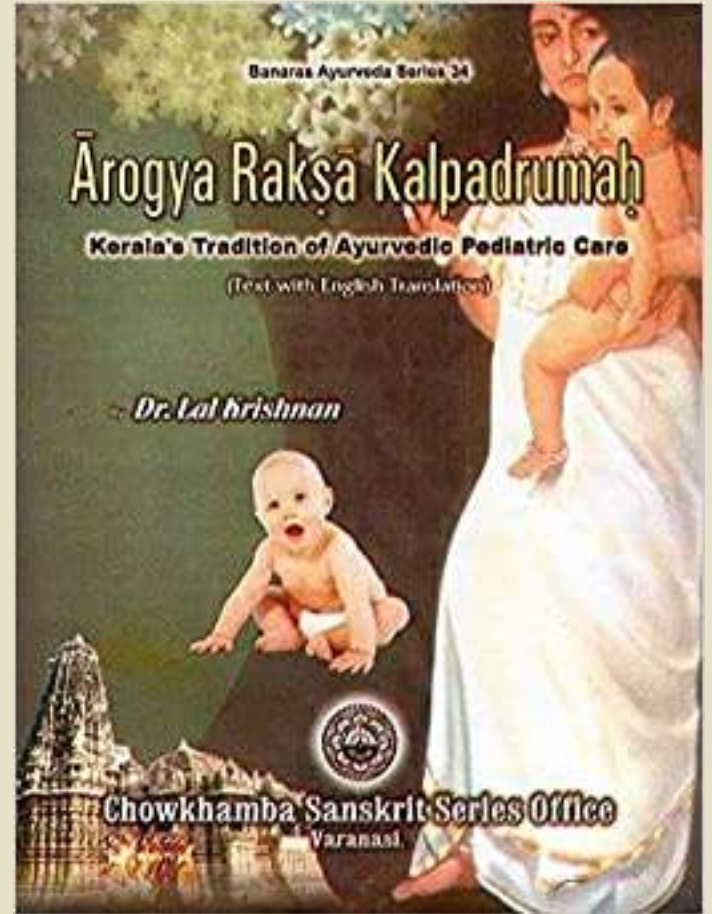
Prākāra Yogas are the salient contributions of the text. They have been advised in order to guard the child against diseases. Though the complete set of these formulations are difficult to be implemented, their impact on developing the strength and immunity of children are to be subjected to further study, especially with the rising importance of immunity in the current scenario.

STATUS IN PRESS

The book was published by the author himself with a Malayalam auto commentary in the ownership of Pārammel Ittūp, at their own press, Vidyāratnaprabhā, Kunnamkulam, Thrissur (Year of publishing unknown). The text was printed in some other presses too, in the name Ārogyarakṣākalpadrumaṃ. Thereafter, the text has been edited, commented and published by various authors. In Malayalam, the books by Dr K. R. Raman Namboothiri (Sulabha Publishers) and Dr B. Syamala are available. The available English translations of the book have been penned by Prof. Dr K. Muraleedharan Pilla (Sahithi books), and Dr Lal Krishnan (Chowkhamba Sanskrit Series Office, Varanasi)

CONCLUSION

Ārogyakalpadrumaṃ is a text that has ready answers for various questions that may arise in the mind of a physician as well as the patient. How long can neonatal massage be done? Which is the recommended medium? after how many days of fever can one have a bath? And much more. The wisdom in the text might have been compiled from the various texts extant at that period but it must have been very much painstaking to build a text that is complete and relevant in all aspects. This text makes the diagnosis of complex groups of symptoms easy, and also suggests precise, easily available, and cost-effective drugs and modalities for the same. Hence, Ārogyakalpadrumaṃ is a gem of a text, which has immense scope in today's general as well as pediatric clinical practice.



A man with short hair, wearing a dark green long-sleeved shirt and light grey pants, is sitting in a lotus position on a grassy field. His hands are pressed together in a prayer position (Anjali Mudra) in front of his chest. His eyes are closed, and he has a calm expression. The background is a blurred green landscape with trees. A white rectangular box is superimposed over the middle of the image, containing the text "IMMUNITY TIPS" in white, spaced-out, uppercase letters.

IMMUNITY TIPS

Yogasana and Pranayama undoubtedly help to increase the overall wellbeing of oneself.



PIPPALYADI MAMSA RASA

Easy & Healthy Recipe

In the wake of COVID – 19 pandemic, our physical and mental well being and immune-boosting has become more significant. What we eat has become increasingly important. Ayurveda advocates several Ahara kalpanas for promoting physical strength as a prophylactic, therapeutic measure and for rehabilitation. Mamsa Rasa occupies the prime place among the kalpanas in bestowing strength. Mamsa rasa is the most suitable diet for those who are emaciated and debilitated by the disease. It is considered as sarvaroga prasamana.

Ingredients:

1. **Pippali (Piper longum) - 1 pinch**
2. **S'unti (Zingiber Officinale) - ¼ teaspoon**
3. **Kulattha (Fried and Powdered) - 10gm**
4. **Yava (Dehusked & Powdered) - 10gm**
5. **Mutton Bones - 25gm**
6. **Amalaki - 1**
7. **Dadima (Medium size) - ¼**
8. **Shallots - 4 to 5**
9. **Ghee - 1teaspoon**
10. **Saindhava - As required**
11. **Water - 4 Cups**

Preparation:

- Mutton Bones, Pippali, Sunti, Yava and Kulattha are boiled in 4 glass of water and reduced to 1 cup.
- The juice extract of Amalaki and Dadima is added.
- Shallots fried in ghee are added to the mixture.
- The soup can be consumed after adding the required quantity of Saindhava.

Medicinal Value:

- Wholesome for those indulging in exercise
- Alleviates s'vasa, Kasa and kshaya.
- Promotes physical strength.
- Beneficial to those who have recovered from fever.
- Conducive for fracture healing.
- Meat of Goat is Pathya in pinasa. Fruits of Amalaki and Dadima are Tridosahara.
- Salubrious for those with ksheena alpa retas(semen)



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we get stronger & more resilient.*

