



Prakaradi Yogas: The Traditional Immunomodulators

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

It's a well-known fact that Prevention is better than cure. As children are the basic building block of future generation its the need of situation and mandatory for all to take care of their health in this current pandemic situation. Childhood is considered as the most susceptible age for infection. So following the proper safety measures during pandemic Arogya can also be achieved by good physical and mental health with the use of different(Ayurveda formulations well explained about *Prakaradi yogas* in *Arogya raksha kalpa Druma* one of the classical Ayurveda paediatric book for children .*Prakaradi yogas* aims at achieving basis of life immunity through various herbal formulations. Immunomodulators are the herbal drugs that augment or improve the immune response and immunity is always a prime concern in childhood. In *Arogya Raksha Kalpadrum* it's been explained well that herbal formulations can enhance immunity when taken accordingly from birth up to attainment of 12 years of age. Use of Immuno-modulatory measures starting from *Jatamatravastha* up to 12 years of age can fulfill the desired health and longevity. Tackles the expected *dosha vaishamya*, and stabilizes *Agni* when taken at right time.This article highlights the role of different *Prakkaradi* Yoga in children for healthy growth and development of child to improve the longevity and quality of life.

Keywords: *Arogyaraksha kalpa druma; prakaradi yoga; immunomodulators Immunity; agni; pandemic situation.*

1. INTRODUCTION

Immunity is a defense mechanism of our body that gives protection against invasion of any infection or allergens which causes disease. Immunity is of two types [1]. Innate Immunity –or genetically transferred immunity, by birth without depending on previous contact with the microbes or infections. [2]. Acquired immunity is that when an individual develops immunity as a result of infection or by specific immunization (vaccine) or by lifestyle, exposure, food. According to Ayurveda Immunity is understood as *vyadhikshamatwa* which is ability of the body to weaken the strength of disease and hence prevention of the body from falling ill this is why it is important to have a good immunity, Now a days due to various changes in dietary habits and life style the immunity is getting weaker day by day and the incidence rate of becoming ill is on alarming rate.

In this current pandemic situation prevention is better than cure proves well about the importance of being healthy and fit.

2. CONCEPT OF IMMUNITY IN AYURVEDA

Ayurveda says 'Swasthasya swasthaya rakshanam, Aturasya vikara prashmanam'. Main goal of Ayurveda is prevention of disease and maintaining the health of a person, second goal is based on the treatment aspect of diseased person. Prevention of disease is directly related to the immune system of the body, or we can say the *Vyadhi Kshamatwa Bala* that itself explains that the power or resistance buildup against *vyadhi*. so we can correlate directly that the Immunity and the longevity can be directly proportional to each other. As compared to the elders children are more prone to infections or disease if they are not taken care properly. According to Acharyas various classification of age is mentioned in our classical samhitas like A/C to *acharya Charak* age up to 16 years is considered as *Balyawastha*. A/C to *Acharya Sushruta* age classification is clearly mentioned as (1) first year of life (0-1) = *ksheerapa*, (2) 1-2 years of life = *Ksheerannada* (3) 2-16 years of age = *Annada*. A/C to *Vagbhatta Acharya* age up to 12 years is considered as *balawastha*. Now as per our topic is concerned about the attainment of longevity which can be achieved by strong immunity and body and mind so *Balawastha* is the main building block to achieve the goal. so for that our acharyas has mentioned so many

ayurvedic formulations to be taken with various *anupanas* and on certain time and *ritu* to enhance the effect of *aushadha*.

2.1 Concept of AGM

As mentioned in classics earlier, "ROGA SARVE API MANDE"AGNOU" *Agni* (digestive) [3]. fire plays an important role in preventing disease, is the root cause of all the disease. *Agni* when vitiated by *vata dosha* causes, *vishama* (unstable), *Teekshna* (aggravated), when vitiated by *Pitta dosha*, and *Manda* (mild), when vitiated by *kapha dosha*. It is important to balance the normal state of *agni* for healthy body by following *Dincharyas*, *Ritucharyas*, and timely *shodhana*.

2.2 Concept of OJAS

It is combined essence of all the *sapta dhatus* [4] and as important as *agni*, its *abhava* (absence) causes depletion of health [5]. *Oja* quality is determined by quality of *Ahara* (food) ingested, strength of *agni*, and mental health. Quality of *ojas* is affected by *kshaya*, emotional disturbances, Over thinking, over exertion and fasting [6].

2.3 Concept of BALA

Bala is power of body to fight against the diseases, which is the end product of *ojas*. "*Baladhithanam Arogyam*" [7]. Three types of *bala* mentioned, *Sahaj* (innate immunity), *Kalaj* (immunity acquires as the age advances achieved due to seasonal and day variations), *Yuktikrita* (achieved due to *ahara* and *aushadha sewan*) [8].

In the same way *Arogya Raksha Kalpa Druma* is a widely accepted Kerala's traditional ayurvedic pediatric care, a classical text book also aims at achieving the same goal by taking care of the base that is the phase in which various traditional ayurvedic formulae are used right from the beginning of birth up to 12 years of age. For achieving disease free body this book has mentioned various *PRAKARADI-YOGAS* (Immunomodulatory-measures.) [9] that are mentioned to be given specifically at starting phase of each growing month. according to this book due to vitiation of *doshas* many diseases are occurring to children very easily due to so many possible reasons so to reduce this prevalence rate of susceptibility towards the disease these *prakaradi yogas* are given. Although so many regimens are taken by the

mother at the time of gestation along with the lifestyle & dietary management and with the immunization as per government. But after the birth along with the passive or acquired immunity

that is vaccinations. if we can practice these *prakaradi yogas* the chances of getting ill would be reduced which hence provide the longieivity to the child.

For a new born child-the drug VASA is grinded in the juice of *Tripadika*, three drops of this preparation of juice is to be instilled over the anterior fontanelle of baby from the first day of birth up to 7 days,by doing this procedure digestive power is maintained correctly, *doshas* will be balanced and also protectionfrom the *balagrahas* will be achieved

Age group	Drug formulation	Mode of administration	anupan	duration	Time	Effect
Newborn(<i>Jatamatra</i>)	<i>Vacha mixed with Tripadika Rasa</i>	<i>Sinchan on murdhani</i>	-	7days	morning	<i>Dosha samayata & agni vriddhi</i>

15 days old child-After the fifteenth day of birth *panchanga* of *Bilva* are collected and powdered well and then mixed with juice of *Dhari* and this preparation is to be given internally for 7 days in the morning to prevent occurrence of disease

Age group	Drug formulation	Mode of administration	anupan	duration	time	Effect
Completed 15 days	<i>Bilva panchanga swaras</i>	oral	<i>dhatri swaras</i>	7 days	morning	Preventive aspect

1 month old child-after one month drugs as mentioned *HINGU,MUSTA,VIDANGA* are powered well and added with *ghita* medicated with juice of *TRAYANTI* and it is to be given internally in the morning for 7 days

Age group	Drug formulation	Mode of administration	anupan	duration	Time	Effect
Completed 1 Month	<i>(Musta, hingu, vidanga) churna</i>	oral	<i>Trayanti sarpi</i>	7 days	morning	Disease prevention

3 month old child, after three months drugs like *VYOSHA* ad powder of *SARIVA* is added with butter and advised to give internally for 7 days

Age group	Drug formulation	Mode of administration	anupana	Duration	time	Effect
Completed 3 month	<i>Vyosha & sariva churna</i>	oral	<i>Navaneeta</i>	7 days	morning	Disease prevention

6 Month old child-After 6 months the baby is given power of *Muslikanda* And *Trikatu* (*Pippali+maricha+shunthi*.)mixed together well and added with honey and is given internally for 7 days in the morning to prevent disease

Age group	Drug formulation	Mode of administration	anupana	duration	time	Effect
Completed 6 month	<i>Muslikanda & trikatu churna</i>	oral	<i>madhu</i>	7days	morning	Disease prevention

1 Year old child- here the distribution of formulations are given in a month wise manner for first seven days of every consecutive month

Age group	Drug formulation	Mode of administration	anupan	duration	time	Effect
1 year 1 month	<i>Dhatri, musta, vyosha churna</i>	oral	<i>Madhu (Honey)</i>	7days	morning	<i>Swasthya</i>
1 year& 2month	<i>Dhatri, musta, vyosha churna</i>	oral	<i>Navneet (butter)</i>	7 days	morning	<i>Swasthya</i>
1year &3month	<i>Dhatri, musta, vyosha churna</i>	oral	<i>Lukewarm water</i>	7days	Morning	<i>Swasthya</i>
1year &4month	<i>Dhatri, musta, vyosha churna</i>	Oral	<i>Madhu (honey)</i>	7days	morning	<i>Swasthya</i>
1year &5month	<i>Dhatri, musta, vyosha panchakola churna</i>	oral	<i>ghee</i>	7days	morning	<i>Swasthya</i>
1year &6month	<i>Jiraka, pippali churna</i>	oral	<i>Madhu (honey)</i>	7days	morning	<i>swasthya</i>
1 year & 7 month	<i>Dadima, vyosha</i>	oral	<i>Dadhimastu</i>	7days	morning	<i>Swasthya</i>
1year &8month	<i>Ghee medicated with granthikamoola & kalinga</i>	oral	Warm water	7days	morning	<i>Swasthya</i>
1year &9month	<i>Vella and Krishna (pippali)</i>	oral	<i>Madhu(honey)</i>	7days	morning	<i>Swasthya</i>
1year &10month	<i>Jiraka and vyosha</i>	oral	sugar	7days	morning	<i>Swasthya</i>
1year 11month	<i>Jiraka and vyosha</i>	oral	Cow milk	7days	morning	<i>Swasthya</i>
1year 12month (2year)	<i>Jirakaand & sharkara</i>	oral	cowmilk	7days	morning	<i>Swasthya</i>

3 Year old child

Age group	Drug form	Mode of administration	Anupana	Duration	Time	Effects
3year 1month	<i>Guduchi, pippali, vacha churna</i>	oral	Ghee&sharkara	7days	morning	<i>Swasthya</i>
3year 2month	<i>Vyosha, yasti, vacha, saindhava, vacha, abhaya, churna</i>	oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 3month	<i>Vella, musta, ela, vacha, nagar, pippali churna</i>	oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 4month	<i>Sariva, vyosha, vacha, jirak, kaiseki churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 5month	<i>Dadima, ambhod, vachadhanyak, magadhi churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 6month	<i>(Vrischiva, bhunimba, vacha, ksheer taru twaka) churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 7 month	<i>(Supyaparni ,Aabda, vira,rudhi, chapla, vacha) churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 8month	<i>(Dronapushpa, abda, vacha,dwijataru twak) churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 9month	<i>(trayamana, abda, vach, kutaj, magadhi)</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 10month	<i>(Maltipushpa, vacha, jirak, kaiseki) churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>
3year 11month	<i>(samipatra, chitrak, jirak, vacha, pippali) churna</i>	Oral	Ghee&sharkara	7days	Morning	<i>Swasthya</i>

Age group	Drug form	Mode of administration	Anupana	Duration	Time	Effects
3year 12month complet ed 4year	(vella, talishapatra, chitrak, pasugandha, abhaya, vacha)	Oral	Ghee&sharkara	7days	Morning	Swasthya

5-year old child-For the five year old child all the above three year old child month wise regimen are to be followed.

6 year old child-six year old child is given with the drugs said for *TRAI BDA*, added with roots of *SANKHA PUSHPI* as a substitute of *VACHA* and the *anupana* for this formation is ghee and honey in unequal quantity but instead of the drug *VACHA* here the drug used will be the *PUSHKARAMULA*. *Anupana* and days will be same as mentioned in above year.

10 year old child

Age	Ghritha prepared from	Mode of administration	Anupana	duration	Effects
10year 1month	<i>Bramhi juice & kalka of abhaya, vyosha, saindhava, vacha, talishpatra</i>	oral	-	7days	Disease prevention
10year 2month	<i>Krishna munda juice & kalka of vidanga, amalaka, Patha, dadima, dipyaka</i>	oral	-	7days	Disease prevention
10year 3month	<i>juice of vetasamla & kalka of jirak, vyosha, saindhava, vacha, jalad, pushkar</i>	oral	-	7days	Disease prevention
10year 4month	<i>(Jivaniya gana, Ambodha, Jayanti moola, chitrak and granthi. with Aja dugdha)</i>	oral	-	7days	Disease prevention
10year 5thmonth	<i>(draksha, vruschiva, patha, abda, hapusha moola, katphala, dadima, with Aja dugdha.</i>	oral	-	7days	Disease prevention.
10year 6thmonth	<i>(Sariva, jalad, ushira, trikatu, surahwaya, jeerak with aja dugdha)</i>	oral	-	7days	Disease prevention.
10year 7 th month	<i>Kalka of (nagar, amalak, anant, vidanga, indrayava, ambuda, bilva panchanga.)</i>	oral	water	7days	Disease prevention.
10year 8th month	<i>Kalka of (pippali, indrayava, draksha, bruhati, amshumatidwaya, guduchi, ambu, nalada, alarka, chitrak, dadima, ambhoda, patha, ugra, sigru, hingu, punarnava, bilva moola, sami valka, malti moolak, utpal, vidanga, amlaka)</i>	oral	Mastu+Jirak +sugar	7days	Disease prevention.
10Year 9month	<i>Decoction of bilva, ajmoda, nirgundi, chapla moola, toyada, dadima with kalka of vyosha ela chitrak, vidanga)</i>	oral	Cow milk	7days	Disease prevention.
10year 10month	<i>Decoction of trayamana, kalinga, abda, chapla moola, with kalka of ativisha, musta, bhunimba, kutaj)</i>	oral	Cow milk	7days	Disease prevention.
10year 11month	<i>Kalka of dadima, triphala, vella, magadhi moola, chitrak</i>	oral	Mastu and jivanti juice	7days	Disease prevention.

Age	Ghrita prepared from	Mode of administration	Anupana	duration	Effects
10year 12month (complete d 11 year)	(<i>patha, kutaj, bhunimba, varshabhu, dhanyak, kalka withvella palasha twak, Nisha dwaya, punarnava, vyosha, dipyaka, Ananta, madhuka</i>)	oral	-honey	7days	Disease prevention.

12 year old child-on first month of 12 year of age- drugs such as ANANTA and VACHA along with sugar and Honey is given for seven days in the morning.

From 2nd Month Onwards instead, of ANANTA, drugs (*bramhi, munda, sami, valka, bhrunga, amalaka, magadhi, vishala, vajra-valli, indu rekhha, bhunimba, gopica*) are to be given onwards up to twelfth month for seven days.

3. DISCUSSION

Prevention is better than cure. Its obvious from the above facts that the *prakaradi yogas* plays an important role in disease prevention by developing immunity as many formulations mentioned in it have the *rasayana* property and *sroto shodhana* properties that helps in the formation of the superior qualities of *dhatu*s and proper assimilation of nutrients for the growth and development of the child. As per our basic *ayurvedic* principles, pharmacological action of drug is determined by its *RASA* (taste), *GUNA* (properties), *VIRYA* (potency), *VIPAK* (Bio-transformation) And *PRABHAVA* (Specific action). Most of the drugs used in *prakaradi yoga* comprises are of predominantly having *katu-Tikta* (PUNGENT AND BITTER) *rasa*, *katu vipaka* and *laghu guna* (easily digestible), all the properties helps alleviating *kapha dosha* and also provides better metabolism due to its *dipana* and *pachana karma*. There are many pharmacological studies have been done on drugs like *pippali, sariva, musali* etc are proven to have immunomodulatory actions, some of the ingredients are having actions like *krimighna* (anti-microbial, anti-helminthic), *Jwarghna* (antipyretic), *Hridya* (cardioprotective) *Rruchya* (taste-stimulant), *Anulomaka* (laxative), *Vishaghna* (anti toxic), antioxidants etc. when these *yogas* are given in different age group with specified duration helps in improving wellbeing of child by providing good metabolism, growth and development with a balanced *agni*.

4. CONCLUSION

Current scenario, where virus has almost affected all age group inspite of severity is seen more in immune compromised and comorbid people and so children may be equally suspected to be next third wave target so as per of we can promote *prakaradi yogas* as compulsive basic startup as important as vaccination to avoid as much as possible risk of infection, most of the drugs used in *prakaradi yogas* works on Central Nervous System like *vacha* which is *rakshoghna*, behaviour modifying, anticonvulsions, memory enhancer, also helps in *vaak shuddhi* and commonly used in pediatric practice [10,11].

Hence it can be concluded that *Arogya Raksha kalpa druma* explaining about *prakaradi yoga* as an immunomodulatory measure can be very fruitful to our future generation when given as per age and schedule by preventing them from source of infections and by reducing the risk of illness that hampers the healthy growth and development of a child. however the many ingredients on these formulation have proven research data on them but further more researches should be promoted among the researchers to prove the efficacy and safety of these *yogas* for the huge acceptance and lime light of the traditional practices [12].

CONSENT

Not applicable.

ETHICAL APPROVAL

Not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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