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Ayurvedic view of Immunization in 21st Century - A Review Article

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ABSTRACT

'*Swasthasya Swasthya Rakshanam*', the very first aim of *Charaka Samhita*. It is on priority fundamental to understand, Ayurveda has in itself the essence of Vaccination or inoculation. Need for vaccination was felt in Modern science since 1800 onwards. But, however health and medicine scholar have described vaccination on the top in public health in 20th century. In the present era i.e. in the 21st century, infectious diseases are spreading on a large scale. To treat all the organisms at a time is not possible. Hence, the concept of vaccination plays an important role in preventive medicine. But, however, prevention of disease still remains out of reach. Therefore, this is high time for a nation to encourage the traditional system of medicine which provides a potential mechanism for the development of immunity in children. The prophylactic approach of Ayurveda is consistent, effective and Harmless. Ayurveda, the traditional system of medicine provides lots of *Lehana* drugs which are supposed to built up the immunity and strength in children.

Key words: *Lehana, Vaccination, Immunity.*

INTRODUCTION

Acharya Charaka defines *Ayu* (Life) as a combination of the body, sense organs, mind and soul. '*Swasthasya Swasthya Rakshanam*'^[1] is the very first aim of *Charaka Samhita*. In other words Ayurveda has given much priority to live healthy and disease free life.

Need for vaccination was felt in the modern science since 1800. But vaccination came on the top in public health in 20th Century. In 21st century, infectious diseases are spreading on a large scale. Hence,

vaccination plays an important role in preventive medicine, But however prevention of disease still remains unreached, as the micro-organisms keep changing their forms and these acquiring resistance.

The better option is to improve and sensitize body's immune system by using *Rasayana*. *Rasayana* refers to use of complex herbal preparations, individual herbs or combinations which aims to rejuvenate or attains the maximum potential of an individual in order to prevent disease. *Rasayana* includes *Suvarna Prashana*,^{[2],[3]} which is an Ayurvedic immunomodulatory technique used in Indian medicine for children. In Ayurvedic system of medicine, *Suvarna Prashana* is one of the 16th *Samskara* described in Ayurvedic classics. *Suvarna Prashana* is mixture of micro fine particles of gold and calcined gold particles (*Suvarna Bhasma*), Ayurvedic herbs, cow's ghee and honey administered at a specific time i.e. *Pushya Nakshatra*. *Suvarna Prashana* is given to the children upto the age of 16 years including newborns.

The prophylactic approach of Ayurveda is consistent, effective, harmless and helps in building up the immunity and strength in children.

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AIM AND OBJECTIVES

1. To bring into notice, the Ayurvedic view of immunization and compare the present vaccination and proposed *Rasayana* preventive method.
2. To propose preventive methods through Ayurvedic concepts.

MATERIALS AND METHODS

The universal immunization program (UIP) seems to have slipped almost entirely into private sector. In this process, the costs of vaccines are double.

The rough vaccine cost is mentioned in below table. It may vary due to change in brands, administration charges and consulting fees of doctors.

Table 1: Cost of different vaccines

Name of vaccine	Single dose approximate price in rupees	Number of doses	Total
BCG	150	1	150
OPV	200	6	1200
DTwP	250	5	1250
Hep-B	200	3	600
Measles	200	1	200
MMR	250	2	500
HiB	350	4	1400
Typhoid	250	3	750
IPV	450	4	1800
TDAP	1200	1	1200
HPV	3100	3	9300
Chicken Pox	1500	2	3000

Hep-A	1100	2	2200
Rota Virus	1250	3	3750
Pneumonia	4200	4	16800
DTaP	1200	5	6000
Flu	900	5	4500
Total	54,600		

BCG=Bacillus Calmette Guerin, OPV=Oral polio vaccine, DTwP-Diphtheria, Tetanus, whole cell Pertussis, Hep-B=Hepatitis B vaccine, MMR= Mumps Measles Rubella, HiB= Haemophilus influenza type B vaccine, IPV= Inactivated Polio vaccine, Tdap=Tetanus, Diphtheria, Pertussis, HPV=Human Papilloma Virus, Hep-A=Hepatitis A

Approximate 37% diseases are infectious and rest of diseases cannot be prevented by vaccinations. Thus hardly 30 infectious diseases over there which can be prevented through available vaccination. Only 9-10 vaccines are included in NIS (National Immunisation Schedule) and are available for free at government hospitals. But they don't cover all infectious diseases. So, in order to prevent all kinds of diseases, Ayurvedic immunization is the answer.

In authentic book of Ayurveda called *Arogya Raksa Kalpadruma*,^[4] medicines that should be given for a newborn child till 13 years of age is mentioned. The idea behind giving these medicines is to impart immunity to child.

The complete Ayurvedic Immunization till the age of 13 years is described in details as *Prakara Yoga*.

Prakara Yoga means: Medicinal formulations that are given as a preventive health care for child to protect the newborn from further diseases.

Ayurvedic Immunization Program^[5]

New born: *Vacha + Hansapadi (Tripādika) Rasa* - 3 drops each day on the vertex - from 2nd day to 7th day. Benefits - Improves digestion and build up immunity.

After 15th day: For 7 days - *Panchanga* of *Bilva* mixed in *Dhātri Svarasa*.

For 1 month old child: Ghee processed with (*Musta*, *Hingu*, *Vidanga* & *Brahmi Svarasa*).

At 3 months: *Vyosha* (*Shunthi*, *Maricha*, *Pippali*) + *Sariva Siddha Ghrita* for 7 days.

At 6 months: *Musali Kandaja Raja* + *Vyosha* powder + honey for 7 days.

At 1 year: Each month for 7 days

1st month - (*Dhātri* + *Musta*) + *Vyosha* + *Madhu*

2nd month - (*Dhātri* + *Musta*) + mixed with *Ghrita*

3rd month - (*Dhātri* + *Musta*) in sugar and warm water

4th month - (*Dhātri* + *Musta*) with sugar and honey

5th month - (*Dhātri* + *Musta*) with *Panchakola Churna* and *Ghrita*

6th month - (*Dhātri* + *Musta*) with *Jeeraka* and *Pippali* powder and honey

7th month - (*Dhātri* + *Musta*) with *Vyosha* + *Dadima* + *Mastu*

8th month - (*Dhātri* + *Musta*) with *Granthika Mūla* + *Kuṭaja* processed in *Ghrita*

9th month - (*Dhātri* + *Musta*) with *Vidanga* + *Pippali* + honey

10th month - (*Dhātri* + *Musta*) *Jiraka* + *Vyosha* + sugar

11th month - (*Dhātri* + *Musta*) with goat milk

12th month - (*Dhātri* + *Musta*) with sugar + *Jeeraka* powder + cow milk

Only the mixing substance changes each month

3rd year: All the medicines should be given empty stomach for 7 days of each month depending upon weight. Ghee and sugar in equal quantity of medicine

1st month - *Guduchi*, *Pippali*, *Vacha*.

2nd month - *Vyosha*, *Yashti*, *Vacha*, *Saindhava*, *Abhaya*.

3rd month - *Vidanga*, *Musta*, *Ela*, *Vacha*, *Shunthi*, *Pippali*.

4th month - *Sariba*, *Vyoṣha*, *Vacha*, *Jiraka*, *Kaiśikī* (*Māśīkka*).

5th month - *Dadima*, *Musta*, *Vacha*, *Dhānyaka*, *Pippalī*.

6th month - *Punarnava*, *Bhūnimba*, *Vacha*, *Tvacha*.

7th month - *Mashaparni*, *Musta*, *Bimbi Root*, *Pippali*, *Vaca*.

8th month - *Droṇapuṣhpa*, *Musta*, *Vacha*, *Palāśa* *Tvak*.

9th month - *Brahmi*, *Musta*, *Vacha*, *Kutaja*, *Pippalī*.

10th month - *Mālatīpuṣhpa*, *Vacha*, *Jiraka*, *Māyāphala*.

11th month - *Śhamī Patra*, *Jiraka*, *Chitraka*, *Vacha*, *Pippalī*.

12th month - *Musta*, *Trikaṭu*, *Dāḍīma*, *Āmalaki*, *Vidanga*, *Tālīsapatra*, *Chitraka*, *Ajagandha*, *Abhaya*, *Vacha*.

5th year: Same as above but substitute *Vacha* with *Pushkaramula*.

8th year: Add *Shankhapushpi* root + medicines of 5th year - mix powder with *ghrita* and honey.

10th year: Every month give *Ghrita* made with following herbs for 7 days.

1st month - *Abhaya*, *Vyosha*, *Saindhava*, *Vacha*, *Talisa Patra*, *Brahmi*.

2nd month - *Vidanga*, *Amalaki*, *Vyosha*, *Pāṭhā*, *Dāḍīma*, *Chitrakaka*, *Mandukaparṇi Svarasa*.

3rd month - *Jiraka*, *Vyosa*, *Saindhava*, *Vacha*, *Musta*, *Pushkaramula* in *Vetasāmla Rasa*.

4th month - *Jīvanīya Gaṇa* + *Musta*, *Agnimantha*, *Chitraka*, *Granthika* in goats milk.

5th month - *Draksha*, *Punarnava*, *Pāṭhā*, *Musta*, *Hapusha Mūla*, *Kaṭphala*, *Dāḍīma* in goat milk.

6th month - *Śārivādi Ghritam* in goat milk.

7th month - *Nāgarādi Ghritam*, *Kutaja*, *Musta*, *Bilva Panchanga* in hot water.

8th month - *Pippalyādi Ghritam* with *Dadhi Mastu* - after making the ghee it has to be filtered into a vessel containing *Jiraka* and *Sita* (rock sugar).

9th month - *Bilvādi Ghritam* / Another alternative – *Pāṭhā*, *Drona Pushpi*, *Musta* in *Mastu* – make a ghee of that herbal paste.

10th month - *Trāyamānādi Ghṛitam*.

11th month - *Dadimadi Ghritam, Ghritam* and *Mastu* in equal quantity.

12th month - *Kashāya – Patha, Kutaja, Bhunimba, Dhanyaka; Kalka – Vidanga, Palasa Tvak, Nisa Dvaya, Punarnva, Vyosha, Dipyaka, Duralabha, Yashti* – make the ghee – administer with honey.

13th year:

1st month - *Durva, Vacha + Sita, Grita*, honey.

2nd month - *Brahmi, Manduka Parni, Śamīvalka, Bhṛngāmalaka, Māgadhi, Asthisrnkhala, Indulekha (Bakuci), Bhunimba, Sariva*).

Suvarna Prashana

The procedure of *Suvarna Lehana* is described in *Kashyapa Samhita*. Metallic Gold is rubbed on clean rubbing stone with water and is mixed with powder of *Medhya Rasayana* herbs, ghrita and honey is given to the newborn.

Acharya Kashyapa says that licking of gold increases *Medha, Agni, Bala*.

Benefits: Improves intellect, digestion, metabolism, immunity, physical strength. Promotes life span, aphrodisiac, it enhances colour and complexion and protect from micro organisms.

Suvarna Prashana administered for 1 month makes the child *Parama Medhavi* (highly intelligent), administered for 6 months, the baby becomes *Shrutadhara* (able to remember the things which are just heard.)

Acharya *Sushruta*^{[6],[7]} and *Vagbhata*^[8] have prescribed gold along with various drugs to a newborn child immediately after birth.

These all herbo mineral compound are very safe to take for long time and at the same time these all are easily available with comparatively less price.

As said earlier, vaccination can hardly prevent few of the diseases, but Ayurvedic immunization prevents all kind of diseases.

DISCUSSION

Mode of action of vaccines^[11]

Vaccines work by presenting a foreign antigen to the immune system to evoke a specific immune response. Four main types are currently in clinical use:

1. An inactivated vaccine consist virus or bacteria that are grown in culture and then killed. Although the particles are destroyed and cannot replicate, the virus capsid proteins/bacterial wall are intact enough to be recognized and remembered by the immune system and evoke a response.
2. In an attenuated vaccine, live virus or bacteria with very low virulence are administered. They will replicate, but locally or very slowly. Since they do reproduce and continue to present antigen to the immune system beyond the initial vaccination, boosters my be required less often.
3. Virus-like particle vaccines consists of viral protein(s) derived from the structural proteins of a virus. These proteins can self-assembled into particles that resembles the virus from which they were derived but lack viral nucleic acid, meaning that they are not infectious.
4. A subunit vaccine presents an antigen to the immune system without introducing viral particles, whole or otherwise.

Mode of action of Ayurvedic Immunization

Majority of drugs work on multiple areas which helps in the achievement of *Vyadhikshamatva*, through it's *Dipana, Pachana, Medhya* and non specific immunobooster properties.

Table 2: Pharmacological action of some drugs^{[4],[9]}

Drugs	Proved Pharmacological Actions
<i>Yashtimadhu (Glycyrrhiza Glabra)</i>	Enhance the macrophage membrane function.
<i>Guduchi</i>	Inhibit the lipid peroxidation and

<i>(Tinospora cordifolia)</i>	superoxide and hydroxyl radicals in vitro.
<i>Amlaki</i> <i>(Emblica officinalis)</i>	Strengthen the defense mechanism against free radical damage induced during stress.
<i>Haritaki</i> <i>(Terminalia Chebula)</i>	In immune-modulation studies, humoral immunity was enhanced where T-cell counts remained unaffected in the animals, but cell-mediated immune response was stimulated.

Concept of Non Specific Immunity

The non-specific immune system also known as innate immune system, and first line of defense, comprises the cells and mechanisms that defend the host from infection by organisms in a non-specific manner. Ayurvedic drugs enhance the power of non specific immune system through above mentioned probable mode of action.

Whereas vaccines provide immunity for respective pathogens only.

Problems in vaccination

1. Unavailability of vaccines for villages of India.
2. Maintenance of cold chain.
3. Complication that arise after administering the vaccines such as local symptoms like abscess, ulcer, rash and generalized symptoms like fever, lymphadenopathy, vaccine induced complications.

CONCLUSION

Wide spread immunity due to vaccination is largely responsible for the eradication of smallpox and restriction of diseases such as polio, measles, tetanus. But however, the truth can't be ignored at the same time. Vaccination in peripheral part of India is difficult, thus complication of vaccination may lead to death of child also. Thus, we can use better measures to get prevention against all kind of diseases by adding Ayurvedic immunization in the schedule. Ayurvedic Immunization plays a vital role in prevention of all kinds of diseases in both healthy as

well as diseased individuals. Along with that it is cheap, readily available and has no difficulties in maintenance. The emerging data suggests that the possible mechanism of these drugs may be immune-stimulation, quenching free radicals enhancing cellular detoxification mechanism repairing damaged non-proliferating cells, inducing cell proliferation and replenishing them by eliminating damaged cells with fresh cells. Thus, we can conclude that vaccines are superfluous and Ayurvedic Immunization drugs should be used as compulsory measures.

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