



SCIENTIFIC REVIEW OF CHILDREN'S IMMUNITY THROUGH AYURVEDA

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ABSTRACT

In the Ayurveda the immunity is defined with the name of *Vyadhikshamatva*. It is very important factor for better wellbeing in total span of life. Children with good immunity survive whole life without suffering of many infective and non infective diseases. In Ayurveda a procedure at time of birth recommended for the enhancement of immunity in infants is known as *Jatakarma*^[1] and the other one well known less practiced procedure *Swarna Prashana* indicated up to the six month^[2]. In present era is a era of urbanization and globalization with fast growing economy, exponentially increase in the poor quality immunity and health; as our data showing diseases growing and infectious entity becoming stronger day by day. We are developing immunity booster specific to diseases and specific to infective organism. These organisms are *Kamarooopi* (pleomorphic) in nature. They has to power changes their self according to the atmosphere, it leads to the failure of vaccination and immunity booster technique of specific immunity. Every year unknown viruses and bacteria are coming to create endemic to epidemic hazards. The medical science achieved great development in life supporting technique, quarantine and medication by which we are capable to decrease the mortality but unable to control on incident, episode of disease and morbidity. Now the point is coming to develop immunity in total in place of specific immunity. The ancient *Ayurvedic* science is working on the concept of single body of single mind it improves health and immunity in total. These Ayurvedic concepts should be utilised to improve the health of forthcoming generation for betterment of their immunity and decrease burden of disease (BOD).

KEYWORDS : Burden of diseases (BOD), *Swarna Prashana*, immunity, *Ghritam*, *Madhu*,

MATERIAL AND METHOD:

MATERIAL: *Madhu* (honey), *Ghritam* (cow ghee), *Swarna* (gold)

METHODS:

1. *Swapanitala matra* of honey and *ghee* is to mix in equal quantity^[3]. It is used for the *Lehana* purpose.
2. *Swarna* mix with honey and *Ghritam*^[4] used for licking just after birth to the age of the six month.

Scientific review of medicament of Ayurvedic immunity booster:**Ghritam:**

It is a specific preparation; by-product of milk has power to regenerate, provide the energy and helps in the myelination of the nervous tissue .generally the neuron system of the baby is ill developed, with the maturation of nervous system children attaining their mile stone. The myelin sheath is made of lipids. The ghee has potent power to proper development of it.

In Ayurveda the Charaka defined the property of ghee as^[5]

- It enhances the *Smriti* (power of retention)
- Improves the *Buddhi* (memory)
- Enhances the quality of *Agni*
- It improves the *oja* (immunity) and genital organ.
- It is useful in the management of *vata*, *Pattika* diseases and effective in *Jwara* (fever), *Visha* (diseases due to toxicity), *Unmada* (Psychological problem) *Shosha* (tuberculosis and diseases of Protein energy malnutrition)
- It is super in all oleaginous substance because it has power to adopt property of other drugs without losing our natural entity^[6].
- It is useful in the so many diseases along with the other medicine as *Saraswata Ghritam* for the protein energy malnutrition, *Brahmi Ghritam* (for the neurological problem of the children) etc.

The absorption of drugs depends upon the oil water coefficient. The oil soluble drugs are easily passed through the membrane of the cell. The *Ghritam* is an animal origin fat with peculiar pleasant smell, palatable and easily accepted by children. The composition of 100 gm ghee is total fat 99.5gm, saturated fat 61.9gm, monounsaturated fat 28.7 gm, polyunsaturated fat 3.7 gm, Trans fat 4 gm, omega 3 fatty acid 1.447 mg, Omega 6 fatty acid 2.247gm, Omega 9 fatty acid 25.02gm,

vitamin A 3069 IU, and Vitamin E 2.8 mg^[7]. A animal study on rat found to be down regulating the enzyme activities which responsible for carcinogen activation in liver and enhances the detoxification of carcinogen in the liver and mammary tissue in compare to soybean oil^[8] ghee has the property to reduce the triglyceride and increase high density lipoprotein^[9]

HONEY:

Honey is a sweet food made by the nectar of the flower. The bees transforming the nectar by regurgitation into the honey its sweetness is due to the monosaccharides as glucose and fructose. Its collection of is an ancient activity started at least 8000 year ago as evidence seen in painting of the cave at Valencia in Spain.

Physical property of honey

It is supersaturated liquid with melting point of 40-50 degree Celsius and crystallised at 13 to 17 degree Celsius. Its refractive index for honey from 1.54 at 13% humidity and 1.474 at 25% humidity and average Ph is 3.9.

Chemical property of honey:

The honey chemically comprises of the monosaccharide, it contains 18 amino acids out of 20. The proline is the main amino acid. Gluconic acid is the main and other organic acid are the formic acid, acetic acid, butyric acid, palmitic acid, malic acid, pyrogluconic acid, valeric acid, palmitic acid, succinic acid and many other.

Nutritional value of honey:

Honey is a mixture of sugar honey mainly consist of fructose 38.5% and glucose 31.0 % remaining carbohydrate maltose, Sucrose and other complex carbohydrate and contain trace amount mineral and vitamins. Analysis of honey shows that fructose 38.2%, glucose 31.3% maltose 7.1 %, sucrose 1.3%, water 17.2% higher sugar 1.5% ash 0.2% other undetermined 3.2%.

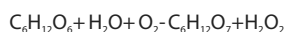
The 100 gm honey has its nutrition value the energy 304k calorie, carbohydrate 82.4%, sugar 82.12gm, dietary fibres 0.2gm, fat 0 gm, protein 0.3 gm, water 17.10 gm, riboflavin vit B2 0.038 mg, Niacin (Vit.B3) 0.121mg, Vitamin B6 , Vitamin C 0.5mg, Calcium 6 mg, iron 0.42 mg, magnesium 2mg, phosphorus 4 mg, potassium 52mg, sodium 4 mg, zinc 0.22 mg.

The traces element in the honey from central Argentina show in an abundance order K,Ca,P,Na,Mg,Fe,Al,Zn,Mn, and cu.^[10]

The honey promotes the healing process in some wound affected with the methicillin resistant staphylococcus aureus shows good control over it by using raw honey as external application. The antibacterial activity of honey due to the low water activity due to the osmosis, chelation of free ion, its slow release of hydrogen peroxide, high acidity

Honey is effective in killing drug resistant bio films which are implicated in rhino sinusitis. Hydrogen peroxide is formed in slow release manner by the enzyme glucose oxidase present on honey. It becomes active only when honey is diluted require oxygen to be available for the reaction, it active only when the acidity of honey is neutralised by body fluid and it destroy when honey is exposed to heat and light.

Honey chelate and deactivate the free ion, which would catalyze the formation of oxygen free radical from hydrogen peroxide leading to the inflammation also the oxidant constitute in honey help clean up oxygen free radical



In honey is typically $H_2O_{2.4}$ produced by dilution of honey with body fluid as a result hydrogen peroxide released and acts as an antiseptic. When a patient cannot use topical antibiotic, honey is a comprehensive treatment of diabetic ulcer. The Ph of honey is 3.2 – 4.5 this Ph prevent the growth of bacteria. The methyl glyoxal has non peroxide antibiotic activity it is due to the MGO and bee defensin-1.

The study shows the pollen grain collected by bee to exert an anti-allergic effect, mediated by an inhibition of IgE immunoglobulin binding to mast cell. This inhibited by mast cell degranulation.

Physiology to improve immunity in children:

a) Ayurvedic aspect:

Honey and Ghritam both are well edible items and palatable to children. It has direct impact on maturation of *dhatu, rasa and oja*. In Ayurvedic literature the counting of diseases has been done out of these maximum number of Vata diseases^[11] as 80, Pittika 40, Kaphaja 20 and Acharya Sharangadhara defined 10 *Raktaja vikara*^[12] too. We have to concentrate to control the Vatika problem as it going to affect maximally in future. The body humoral system Vata, Pitta and Kapha is balancing the body by homeostasis out of these vata has the power of to carry Pitta and Kapha from one place to other place, primarily Pitta and Kapha immovable^[13].

Honey and Ghritam in equal quantity is not indicated because of incompatible in equal quantity. It is directly impacting on body and aggravation of vata, manifest into Vatika disorder. As toxin and antigen administered in body it create imbalance in Dosha start to develops disease in reflection to it body acclimatise and combating by our fighting mechanism. The similar concept used in ancient concept to create *vishkanaya* by administering of poison in small amount. Our Acharya used this concept to enhance the children immunity as ne born babies has active thymus gland other humour producing organ of body that why children has great power to develops immunity toward the interred toxins. When honey and Ghritam administered into the vata aggravated and causing the *Vatika vikara*, baby develops immunity toward vitiation of Vata and getting protection from eighty Vatika diseases.

Honey and ghee provide immunity and nutrition to the baby. At early stage it also has great impact to control the body temperature as both are good source of energy.

MODERN ASPECT OF JATAKARMA:

- Honey and ghee are the good source of nutrition and energy. It

is easily digestible and palatable.

- Ghee has the property of good vertical absorption of pollen irritant material directly to the blood which is generally present in the environment. This irritant material stimulates the body to produce antibody against the environmental allergens. This environmental pollen allergen is cause of bronchial asthma. So by doing Jatakarma, we can prevent asthma at early stage.
- It can help to prevent hypothermia as it is good source of energy.
- Honey has minerals, vitamins and traces of all essential amino acid.
- Honey has antibacterial property, wound healing property
- The *ghee* well known in Ayurveda as *Ghritam* as best lipid among all lipid media. It is extensively used in Ayurvedic medicine especially for extraction, absorption and assimilation of any medicine. It is used as carrier media in certain medicine to facilitate the transport of active principle across the cell membrane which permeable to only lipid molecules e.g. blood brain barrier where transport of medhya medicine is possible if drug processed in the lipid media.
- Even though ghee is animal fat studies shows that larger dosage

Swarna Bhasma:

In Ayurveda Swarna Bhasma is mentioned with the property of *kashaya, Tikta and Madhura* and *Katu rasa*; sheeta veerya and Madhura Vipaka. Its action is vrisya (aphrodisiacs) *Brihana, sansran, Rasayana, netrya, medhya, dheer, ayushya, (antiaging) kanti prada, vagvishuddhikar (improve voice), stheritwama, lekha, vishagarahara, bhutavesha prashantkar, ruchya, Varnaya, pathya, pustikara, vayasthapaka, tridosahara*^[14].

The recent researches shown that the normal sperm cell contain 17.66 microgram per decilitre. It is observed that if gold concentration drops up to the 11.5 microgram per decilitre its motility becomes slow. Semen with low sperm count had a gold concentration of only 6 microgram per decilitre^[15].

Swarna Bhasma is found to be effective in the auto immune reaction showing better to normalise homeostasis as mentioned in the Tridosha hara in classics.^[16]

Swarna Bhasma has property to brought medicine to the target organ which increases the bioavailability and potentiates the efficacy of active ingredient. The research study shows that if Swarna Bhasma prepared with the method in the Ayurvedic text has better absorption in compared to other method. It defined the absorption of gold Bhasma follow the different method of absorption may be directly to cross the cell membrane. That's why our Acharya uses Swarna in minimum quantity along with active ingredient to enhance its activity and efficacy on body as *Vasant kusumakara rasa* used in *Prameha* (diabetes) having 8% Swarna^[17].

RESULT:

We are working on to treat the diseased secondly to prevent it. In Ayurveda the actual definition it is sciences of life which have objective of preventing diseases for secondly to diseased persons. This prospective of Ayurvedic thinking explore its potential not from child birth but also during pregnancy. As per recent researches and literature showing the how our literature thinking the upcoming diseases as autoimmune disorder, decreasing fertility, increasing the cases of infertility due to improper development of ova and egg manifest into so many genetical problem with burden on society.

The Ayurveda is working on immunity and internal wellness to make body intact from upcoming psychological, physiological and physically healthy since child hood. At early stage by giving Swarna Prashana we can enhance the neurological activity and we can repair of the brain insult due to birth asphyxia. As I worked in the low birth weight baby with history of birth asphyxia shown better development in compare to non Swarna Prashana babies. I had found decrease in stiffness upper and lower limb, toe walking, and

drooling and good social development better learning. This method enhances the immunity of the baby to produce resistant toward environmental allergens as present in honey utilised during process of Swarna Prashana. The procedure develops the immunity in total for fighting with environmental calamities as pollution, infection, autoimmune disorder and vigour for healthy living transfer to next generation. The health is the prime most important to the achieving all the things of necessity. We should follow the rules of Ayurveda mentioned in the text more than 5000 years ago for better and healthy wellbeing.

CONCLUSION:

Ayurveda is a science of life; we should follow it not only just after the birth but prior to the pregnancy in a planned manner. Utilising the process of Swarna Prashana, lehana mentioned in Ayurveda to enhance the health of backbone of nation. It can be utilised in the prevention of the upcoming burden of diseases.

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