

HERBAL SUPPLEMENTS FOR STHANYAJANAN (GALACTOGOGUES)

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ABSTRACT

Human breast milk serves as a source of nutrition which is uncontaminated by environmental pathogen. Multiple immunological factors produced by the mother's immune system are transported to infant through breast milk and are associated with a protective role against infection in children. It reduces the incidence of infantile diarrhoea, sudden Infant Death Syndrome (SIDS), allergic/hypersensitivity diseases, and development of Type 1 (insulin dependent) and Type 2 (non-insulin dependent) diabetes mellitus relative to the use of infant formula. In Ayurveda, 'Kasyapa' defines pure breast milk as that which the baby thrives well and both the mother and baby remain happy, healthy, and free from any ailment. Breast milk promotes growth and development and acts as a tonic for all the tissues. In Ayurveda text, many herbs are described for improving breast milk under the name "Stanyajanana".

Keywords: *Stanyajana, Kasyapa, SIDS*

INTRODUCTION

Ayurveda gives due importance on good nutrition at every stage of life, in order to preserve health of an

individual. Breast milk is optimal food for almost all infants in the first year of life. Ayurvedic text describes

the *Ksheerap* stage of child, in this the children up to one year of age have their main diet as milk. Ayurvedic and modern texts both describes breast milk in detail. In ayurvedic texts, *stanyanirmiti* (formation of breast milk), causes of *stanyapravritti* (breast milk ejection), *stanyasampat* (merits of breast milk), *stanyakarya* (functions of breast milk), *stanyamahattva* (importance of breast milk), *stanyavikruti* (disorders of breast milk), *stanyavidhadravyas* (drugs increasing quantity of milk) etc. are discussed in detail. In Ayurveda, *Kasyapa* defines pure breast milk as that which the baby thrives well and both the mother and baby remain happy, healthy, and free from any ailment, breast milk promotes growth and development and acts as a tonic. Different drugs and diets are mentioned in Ayurveda for milk enhancement.

Review in literature:-

Formation of breast milk (lactogenesis)

It has been quoted by Ayurveda physicians that nutrient fraction of food (*Aahar Rasa*) which has been formed after proper digestion, gets circulated to whole body with the help of *Vyana Vata* (a type of *Vata Dosha*) and reaches to mammary glands and gets converted into breast milk (*Stanya*). It can be assumed that formation of adequate quantity and quality of breast milk is determined by the quality of *Aahar Rasa* which depends upon both adequate food and their proper metabolism too (*Sushruta Samhita Nidanasthana 10/18*). This might be possible reason for considering breast milk (*Stanya*) as subsidiary tissue (*Upadhatu*) of *Rasa Dhatu* (plasma of blood) (*Charak Samhita Chikitsasthana 15/15*). The quantity of daily production of breast milk (*Stanya*) has been estimated as two *Anjali* i.e. approximately 390ml (a measurement unit for volume, the term *Anjali* refers to the quantity of substances taken by joining the both palms of self) (*Ashtanga Hridaya Sharirasthana 3/81; Ashtanga Sangraha Sharirasthana 5/63*).

Characteristics of pure mother milk

Pure milk possesses normal color, odor, taste and touch, gets completely dissolved in water. It is sweet (*Madhura*) and astringent (*Kashaya*) in taste unctuous (*Snigdha*) in touch, whitish (*Shankhabha*) in appearance and devoid of foam etc. Such kind of milk

provides proper growth and development of body, psyche, strength and provides longevity with disease free state (*Charak Samhita Sharirasthana 8/54; Sushruta Samhita Sharirasthana 10/31; Sushruta Samhita Nidanasthana 10/25; Singh BM, 2015*). Along with these features of vitiated milk and their effect on health, growth and development of child has been also discussed (*Charak Samhita Chikitsasthana 30/237- 249*). A recent study has shown that infants feeding vitiated milk were more likely to suffer from URTI and diarrhoea as comparison to those who were having non vitiated milk (Singh D et al., 2019).

Factors affecting quality and quantity of mother milk
Several factors including dietary, psychological and nutritional status of mother have been described which influence the qualitative and quantitative status of milk (*Sushruta Samhita Sharirasthana 10/30, Ashtanga Sangraha Uttarasthana 1/24; Charak Samhita Chikitsasthana 30/232-236*). Studies have reported individual variations in breast milk composition, which are attributed to the stage of lactation.

Why Supplements Are Required?

When there is a low breast milk production or supply to the infant due to a low milk supply during breastfeeding, such as waiting too long to start breast-feeding, not breast-feeding often enough, supplementing breastfeeding, an ineffective latch and use of certain medications. Sometimes previous breast surgery affects milk production. Factors such as premature birth, maternal obesity, pregnancy induced high blood pressure and poorly controlled insulin-dependent diabetes can also affect milk production.

Vagbhata has mentioned that emotional factors like anger and grief, lack of affection towards the child can affect lactation. Activities which cause exhaustion, fasting and excessive emaciation of the body also causes of *sthanyanasha* or reduced production of milk. Excessive use of Purificatory therapies, conceiving next child while lactating and some unknown natural causes can also be the causative factors. Intake of dry foods and drinks by the mother can also hamper lactation. Child not receiving proper breastfeeding may show poor weight gain, signs of dehydration (as

assessed from the frequency of micturition) and will be deprived of proper sleep and activities.

Galactagogues and use herbal supplements over synthetic drugs

Lactation failure due to improper feeding practices can be managed in most cases by proper counselling of mother and also by providing proper emotional, mental and physical support to the mother. However, low milk production has to be frequently addressed by physicians by prescribing pharmaceuticals and other products to enhance milk production, namely galactagogues. Galactagogues may be considered when non-pharmacologic interventions are found to be insufficient. Also, the use of galactagogues should be restricted to patients with a no treatable cause of reduced breast milk production. Galactagogues may be synthetic or plant derived. Drugs such as domperidone, metoclopramide, Antipsychotics such as risperidone, chlorpromazine and sulphiride and Certain hormones such as oxytocin, growth hormone (GH), thyrotropin-releasing hormone (TRH), and thyroid-stimulating hormone (TSH) acts a synthetic galactagogues. But it has been proven that all these drugs produce unwanted effects in both mother and baby. The notable side effects in mothers are xerostomia (dry mouth syndrome or hyposalivation), cardiac arrhythmia, lethargy, sedation, extra pyramidal symptoms such as hypertension, tremor, tic, facial seborrhea and hyperhidrosis and even sudden death. In infants the symptoms due to ingested milk from treated mothers include intestinal discomfort, lethargy and sedation so it's important to use herbal supplements over synthetic drugs.

Herbal Supplements

Certain drugs have been indicated to improve quality and quantity of *Stanya* as *Stanyajanana* and *Stnyashodhana Dravya*. *Stanyajanana Dravya* are *Veerana* (*Acalypha ornta*), *Shaali* (variety of rice), *Shastika* (variety of rice), *Ikshuvalika* (*Saccharum officinarum*), *Darbha* (*Imperata cylindrica*), *Kusha* (*Desmostachya bipinnata*), *Kasha* (*Saccharum spontaneum*), *Gundra* (*Typha angustata*), *Itkata* (*Sesbania bispinosa*) and *Katrina* (*Aloe succotrina*) (*Charak Samhita Sutrasthana 4/17*). *Stnyashodhana Dravya* are *Patha* (*Cissampelos pareira*), *Sunthi* (*Zingiber officinale*),

Devdaru (*Cedrus deodara*), *Mustaka* (*Cyperus rotundus*), *Murva* (*Marsdenia tenacissima*), *Guduchi* (*Tinospora cordifolia*), *Vatsakaphala*, *Kiratikta* (*Swertia chirata*), *Katuki* (*Picrorhiza Kurroo*) and *Sariva* (*Hemedismus indicus*) (*Charak Samhita Sutrasthana 4/18*).

DISCUSSION

Galactogogues are medications or substances of herbal or synthetic origin, used to induce, maintain or augment milk production. But synthetic ones have remarkable side effects on mother and infant. Based upon the etiology and chikitsa (treatment) mentioned in ayurvedic classics it can be derived that *Stanya kshaya* (drugs promoting lactogenesis).

Stanyanaasha (reduced lactogenesis) is a condition occurring due to four main factors:

1. *Rasa dhatukshaya*
2. *Agni mandhyata*
3. *Stanavahasrotos avrodha*
4. *Maansika bhava*

Probable mode of action of different herbal galactagogues according to causative factors can be explained as:

1. Drugs working on *Rasa dhatukshaya*:
 - a) *Stanya* is the *upadhatu* of *rasa dhatu*. So, *rasa vardhaka* diet and drugs will increase the quantity of *stanya*. Drugs of *madhura rasa*, *sheetaveerya* and *madhuravipaka* are *rasa dhatu* and *stanyavardhaka*. For example, *milk*, *ghrita*, *oil*, *coconut*, *shali*, *shashtika*, *ikshu* etc.
 - b) Based on a broad ayurvedic principle 'like begets like,' intake of milk and milk exuding herbs (*ksheerayukta* plants) are helpful in treating *stanyakshaya*.
2. Drugs acting on *Agni mandhyata*
 - a) Further for the proper formation of *dhatu* and *upadhatu*, *agni* (*jatharagni*, *rasa dhatvaagni*) should be in equilibrium state. Especially in *sutika* where, there is *dhatukshaya* and *heena* (decreased) *agni* state due to pregnancy and *pravahanavedna* (labour pains/bearing down efforts).
 - b) Drugs act on *rasavahi srotas* and *rasagni* by their *ushnaveerya* and *madhuravipaka*. Being *ushna* in *veeryathese* are *uttejaka* (stimulant), *agnivardhaka*,

deepana- paachana, srotosodhaka, shothahara, vatanulomaka, and being Madhura in *vipaka* are *vrishya, rasayna, dhatuvaradhaka*.

3. Drugs acting on *Stanavahasrotoavrodha*

a) Drugs listed 13-18 numbers in table 1 are *ushna-veerya* and *katuvipaka*. These are *srotoshodhaka, agnivaradhaka, aampachaka, vatanulomaka, deepana, paachana, vrishya, balya, stan- yajananana*. These specifically work on *jatharagni* and *rasadhatvaagni*. There by stimulating proper formation of *rasa dhatu* and *upadhatu (stanya)*. Also, these herbs being *sroto- shodhaka*, clear the obstruction if any, in *stanavahasrotas* and thus ease the process of galactokinases. All *ushnaviryaya* and *KatuVipaka* drugs may also have hormone stimulating action.

b) *Sheetaveerya* of drugs 19-22 listed in table 1 make them *dhatuvaradhaka, vrishya, balya*, whereas they are *deepana, paachana* and *agnivaradhaka* by virtue of *katu vipaka*.

4. Drugs acting on *Maansik bhava*.

a) Some of the herbs quoted in *stanyakshayachikitsa* are also *medhyaeg shatavari, yashtimadhu, pippali, palandu, lashuna, yava* and thus may relieve the deep-rooted stress, one of the main causes of *stanyakshaya*.

b) Counselling and meditation along with drugs do play an important role to cure the problem.

Based upon the chemical constituents of herbs mentioned for the treatment of *stanyanaasha* or *stanyakshaya*,

Most of the herbs have high nutritive value being rich in carbohydrates, amino acids, albumin, globulin (e.g. *shatavari, shringataka, vidarikanda, narikela*), calcium, iron, phosphorous (*yava, kusha*) thereby promote general health.

b) Some herbs are carminative, stomachic, digestive.

c) Some herbs are uterine stimulant and may have oxytocic action (*Krishna and shwetajeeraka, hingu*)

d) Most of the herbs contain flavonoids and other antioxidants. Their role has been proved as a potent stress reliever and health promoter. *Shatavari* has steroidal saponins. One hypothesis state that phytoestrogenic property results from the hormone like action of these saponins and it has been observed to increase milk secretion in women suffering from hypogalactia.

CONCLUSION

Supplementation and proper diet to enhance quality as well as quantity of breast milk.

Various such methods are mentioned in Ayurvedic texts. Drugs included in *Sthanyajananana dashemani* has been evidenced that the drugs have pharmacological properties and actions which makes them effective galactogogues and acts by managing *rasadhathukshaya*. other drugs such as *shatavri* and *fennel* are mentioned in different texts by acharyas which are proven to be effective in modern era are great options.

The drugs can be used safely in lactating mothers. Also, it helps the mother to attain stability of *dhathus* which is usually affected during pregnancy and labor. Systematic studies are to be conducted on preclinical and clinical basis so that the efficacy of these drugs can be proved. In this era of modern lifestyle, where breast milk production has been affected qualitatively and quantitatively, such practices can be of great blessing, ones the formulation and dosage have been effectively fixed.

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