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Review Article

Stanya-Shodhana Mahakashaya

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Stanya-Shodhana Mahakashaya - A Potential Solution for Diseases in Breast Feeding Infants - A Review

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Breast milk is referred as Stanya in Ayurveda texts also known as Piyush (nectar/Amrita); justifies totally with its importance for a newborn. Newborns primarily rely on the breast milk for their nutrition. Ayurvedic texts have described qualities of normal breast milk under the heading "Shuddha Stanya". Emphasis has been given on the aspect of abnormalities of breast milk and their consequences on infants and as well as on mothers in Ayurveda classics. Vitiation in the normal qualities of Stanya is described as Stanya Dushti. To deal with the same, a concept of Stanyashodhan is mentioned in Charak Samhita in the form of group of ten drugs known as Stanyashodhan Mahakashaya. This article involves synthesizing information from various Ayurvedic texts and internet databases like PubMed, PubMed Central Databases, Google Scholar, CrossRef to substantiate the Stanya Shodhan attributes of these herbs. Neonates are highly susceptible to medication errors and adverse drug events due to their fragile physiology, immature organ systems, and limited ability to metabolize and eliminate medications. This problem can be solved if we treat the mother and thus providing treatment to infants through the Shodhita breast milk using Stanyashodhana Mahakashaya.

Keywords: Sthanya, Breast Milk, Stanyashodhan Mahakashaya, purification of breast milk, Ayurveda

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Introduction

Breast milk is referred as *Stanya* in *Ayurveda* texts also known as *Piyush* (nectar/*Amrita*); justifies totally with its importance for a newborn. Newborns primarily rely on the breast milk for their nutrition. Human milk contributes to their immune maturation, organ development, and healthy microbial colonization due to presence of hundreds to thousands of distinct bioactive molecules that protect them against infection and inflammation.**[1]** Due to ability to offer adequate nutrition and a variety of bioactive health elements, human breast milk is considered as the ideal for newborn. Many studies suggests that infants who are breastfed tend to have better health and immunological development, fewer gastrointestinal disorders, and lower death rates than those who are fed formula. **[2]** A study demonstrated that the breast-fed group showed a great number of average IQ test scores and better SI scores compared to bottle fed group. **[3]** These studies prove the essentiality of breast milk as the initial source of nutrition in newborn babies. *Kashyap Samhita* states that pure breast milk provides strength, longevity, growth, and development to both child and mother or wet nurse. **[4]** *Acharya Charak* has described qualities of normal breast milk under the heading "*Shuddha Stanya*" which are normal in colour, smell, taste and touch and dissolves entirely in water, healthy for infants.**[5]** Emphasis has been given on the aspect of abnormalities of breast milk and their consequences on infants and as well as on mothers in *Ayurveda* classics. Vitiation in normal qualities of *Stanya* is described as *Stanya Dushti*. To deal with same, a concept of *Stanyashodhan* is mentioned in *Charak Samhita* in form of group of ten drugs known as *Stanyashodhan Mahakashaya*.

Aim and Objectives

This article aims at reviewing the properties and action of all the 10 herbs included in *Stanyashodhan Mahakashaya*. The focus is on comprehensively understanding the efficacy of these herbs in *Stanya Shodhan* (purification of breast milk).

Materials and Methods

This evaluation involves synthesizing information from various *Ayurvedic* texts and internet articles to substan. *Stanya Shodhan* attributes of these herbs.

Databases including PubMed, PubMed Central Databases, Google Scholar, CrossRef were referred.

Composition of human breast milk (HBM) and its role in human development

HBM is a highly complex system of various bioactive components. It is the most suitable source of nutrients for infants and is indispensable in the formation of early immunity.**[6]**

Basic components in HBM are water and macronutrients (carbohydrates, proteins, and fats) **[7]**

Carbohydrate comprising about 7% (60–70 g/L) of HBM, accounts for 40% of the total calorie reserve with lactose being the main carbohydrate

HBM **protein**, composed of a mixture of whey, caseins, and various peptides, provides crucial amino acids indispensable for infant growth and development, as well as bioactive proteins and peptides essential for many functions. Some proteins, such as α-lactalbumin, β-casein, folate-binding protein, haptocorrin, bile salt-stimulated lipase, amylase, α-1 antitrypsin, and lactoferrin, play an auxiliary role for digestion and utilization of various other nutrients.**[8]**

Fat is the second most prevalent macromolecule in HBM which accounts for almost 50% of the nutritional supply of the infant. It is most important for infant growth and development of the central nervous system.**[9]**

Human milk- much more than mere nutrition:

Although human milk is considered sterile, recently researchers have established the presence of certain commensals and other probiotic bacteria considered the best for infant's gut.**[10]** Staphylococci, Bifidobacteria, Streptococci, and lactic acid bacteria are certain microorganisms found in human milk. Among these, Bifidobacteria is considered to stimulate the growth of other potential healthy bacteria in the newborn gut system, although the origin of all these bacteria remains controversial. **[11]** Human milk ingested by newborns (800 mL/day) contains around 105–107 bacteria, which proves the close proximity of the gut microbiota of the infant to the mother's milk. Furthermore, human milk oligosaccharides (HMOs) have an essential role in the development to substantiate the *Stanya Shodhan* attributes of these herbs.

To substantiate the *Stanya Shodhan* attributes of these herbs. Lactobacillus strain in human milk is found to stimulate the production of cytokines and inflammatory mediators (CD4+, CD8+, natural killer cells, and regulatory T cells).**[12]** Human milk bacteria serve as biotherapeutic agents as these are considered to possess probiotic potential, antiallergic, antiarrhythmic, and inhibiting the infectivity of HIV and others.

Human milk vitiation *(Stanya Dushti)* in *Ayurveda* and its impact on infant health

Charak explains 8 types of abnormalities in breast milk (*Ksheera Dosha*) based on *Dosha* prominence.**[13]** *Dosha* accumulates in mammary glands and ducts (*Ksheeravaha Sira*) leading to abnormalities in breast milk. *Ashtang Sangraha* explains variety of diseases like *Jwara* (fever), *Kasa* (cough), *Chhardi* (nausea, vomiting, gastric disturbance) due to consumption of vitiated breast milk. These all are commonly observed in the paediatric population.**[14]** *Ksheeralasaka* and *Parigarbhika* are two most common diseases observed in neonates. These conditions are explained by focusing on the growth and development of new-born. *Ksheeralasaka***[15]** is a condition involving the vitiation of all the three *doshas* resulting in symptoms like diarrhoea, malaise, fever, vomiting, nausea etc. in the child. This is comparable to the chronic indigestion and disturbed gastro-intestinal functioning, which is commonly observed in breast fed infants. *Parigarbhika* is popularly understood as the failure to thrive or malnutrition related disorders. It has been explained as an important factor resulting from the abnormal breast milk.**[16]**

Discussion

The details of the ten drugs of the *Stanyashodhan Mahakashaya* are summarized in the following tables:

Table 1: Botanical description of the drugs

SN	Classical Name	Botanical name	Family	Part used
1.	Patha	Cissampelos pareira Linn.	Menispermaceae	Root
2.	Mahaushadha	Zingiber officinale Rosc.	Zingiberaceae	Rhizome
3.	Surdaaru	Cedrus deodara Roxb. Loud.	Pinaceae	Heart wood
4.	Musta	Cyperus rotundus Linn.	Cyperaceae	Rhizome
5.	Murva	Marsdenia tenacissma W. & A.	Asclepiadaceae	Root
6.	Guduchi	Tinospora cordifolia Miers.	Menispermaceae	Stem
7.	Vatsakphala	Holarrhena antidysentrica Wall.	Apocynaceae	Seed
8.	Kirattikta	Swertia chirata Roxb. ex Flem.	Gentianaceae	Whole plant
9.	Katukrohini	Picrorhiza kurroa Royle ex Benth.	Scrophulariaceae	Rhizome
10.	Sariva	Hemidesmus indicus R. Br.	Asclepiadaceae	Root

Table 2: *Rasa Panchaka* (Properties) of drugs as per API

Name	Rasa	Guna	Virya	Vipaka	Karma	Reference
Patha	Tikta Katu	Laghu Tikshna	Ushna	Katu	Tridoshshamak, Stanyashodhan Vishaghna	[17]
Mahaushadha	Katu	Laghu Snigdha	Ushna	Madhura	Vata-Kaphahara, Deepan-Pachana	[18]
Surdaaru	Tikta	Laghu Snigdha	Ushna	Katu	Vatakaphahara, Vranashodhana	[19]
Musta	Tikta Katu Kashaya	Laghu Ruksha	Sheeta	Katu	Pitta-Kaphahara Shothhara Deepan-Pachan	[20]
Murva	Madhura Tikta	Guru Sara	Ushna	Madhura	Tridoshaghna Vishaghna	[21]
Guduchi	Tikta Kashaya	Laghu	Ushna	Madhura	Tridoshshamaka, Rasayana, Sangrahi	[22]
Vatsakphala (Indrayava)	Katu Tikta	Laghu Ruksha	Sheeta	Katu	Tridosh Shamak, Deepan, Grahi	[23]
Kirattikta	Tikta	Laghu Ruksha	Sheeta	Katu	Kaphapittahara, Jwaraghna, Saarak	[24]
Katukrohini	Tikta Katu	Laghu	Ushna	Katu	Pittahara Deepan Bhedana	[25]
Sariva	Madhura	Guru Snigdha	Sheeta	Madhura	Tridoshshamak, Raktashodhak Jwarahara	[26]

Table 3: Established Pharmacological properties of the drugs

Plants	Pharmacological properties
Cissampelos pareira Linn.	Anti-plasmodial, Antimycobacterial[27], Antitumour activity[28], Anti-diabetic[29], Anthelmintic activity[30], Antioxidant activity[31]
Zingiber officinale Rosc.	Antioxidant[32], Anti-Inflammatory[33], Antimicrobial[34], Anticancer[35], Cardioprotective[36], Anti-Obesity[37], Hypoglycaemic[38]
Cedrus deodara Roxb. Loud.	Antibacterial[39], Insecticidal[40], Anti-Tubercular[41], Antidiabetic[42], Antioxidant Property[43], Antispasmodic[44], Antiarthritic[45]
Cyperus rotundus Linn.	Anti-Diarrhoeal[46], Anti-Inflammatory[47], Anti-Bacterial[48] Analgesic[49], Anti Pyretic[50]
Marsdenia tenacissma W. & A.	Antitumor, Hepatoprotective, Diuretic, And Immunomodulatory[51]
Tinospora cordifolia Miers.	Anti-Inflammatory[52], Anti-Cancer Activity[53], Immunomodulatory[54], Anti-Diabetic[55], Antimicrobial[56], Anti-Osteoporotic[57], Wound Healing[58], Hepatoprotective[59], Cardioprotective[60]
Holarrhena antidysentrica Wall.	Anti-Hyperglycaemic & Anti-Hyperlipidaemic Activities[61], Anti-plasmodial Activity[62], Antidiarrheal Activity[63], Antioxidant Activity[64], Anticancer activity[65]
Swertia chirata Roxb. ex Flem.	Antibacterial, Antifungal, Antiviral, Anticancer, Anti-Inflammatory, And Others Like Antidiabetic and Antioxidant Activities[66,67]
Picrorhiza kurroa Royle ex Benth.	Anti-asthmatic, & Immunomodulatory[68], Antiviral Activity[69], Anti-Diabetic[70], Anticancer[71], Antioxidant & Anti-Neoplastic[72], Hepatoprotective[73], Anti-Inflammatory Activities[74], Hypolipidemic Effect[75]
Hemidesmus indicus R. Br.	Antinociceptive[76], Hepatoprotective[77], Anti arthritic[78], Anti ulcerogenic potential[79], Anti-oxidant[80], Invitro antithrombotic[81], Reno protective[82], Hypoglycaemic[83]

Stanya is said to be the *Upadhatu* of *Rasa Dhatu*. Improper diet and lifestyle (*Ahitkara Ahara Vihar*) followed by a new mother (*Sutika*) leads to an imbalance in *doshas* (*Dosha Dushti*). This imbalance affects the *Rasa Dhatu*, eventually resulting in the formation of impure breast milk (*Stanya Dushti*).

Acharya Sushruta mentioned *Stanyashodhana Karma* of *Mustadi Gana* under which drugs like *Patha, Katuki, Musta* etc are mentioned which are also described by *Acharya Charaka* in *Stanyashodhana Mahakashaya. Acharya Vagbhatta* has mentioned *Ksheeralsaka* disease in infants to be caused by *dushit stanya* & its treatment to be done by drugs like *Patha, Kutaki, Indrayav, Sariva*, etc.

Another common disease given by him is *Baalshosha* (malnutrition in children) which is caused by *kapha Dushita Stanya Sevan* and to treat same he prescribed drugs like *Patha* and *Shunthi*. On reviewing it becomes evident that these drugs are among ten drugs mentioned by *Acharya Charak* in *Stanyashodhan Mahakashaya*. These all references give rise to conclusion that *Ayurvedic* literature focussed on treatment of vitiated breast milk instead of treating child directly in diseases caused by *Dushit Stanya.* The quote given by *Acharya Vagbhatta- Rogastu Dosh Vaishamyam"* clearly explains role of *Dosha* vitiation in manifestation of every disease. As per *Acharya Charaka Stanya Dushti* (Vitiation of breast milk) is caused by all three *Doshas* individually as well as combined depending on causative factor. And five out of ten drugs namely *Patha*, *Murva*, *Guduchi*, *Vatsakphala* and *Sariva* in *Stanyashodhan Mahakashaya* are having *Tridoshshamaka* property as per API. The drugs given by *Acharya Charak* in *Stanyashodhan Mahakashaya* are mainly *Tikta Rasa Pradhan* and also *Stanya Shodhana Karma* is attributed to *Tikta Rasa* in *Sutrasthana* chapter 26 where he has described *Karmas* of six tastes.**[84]** Supporting evidence- A 34 years old second gravida patient delivered an alive full term male child of weight 2.82 Kg. extracted as vertex presentation on 19/4/2023 by caesarian section. During breast feeding, she noticed that her milk was blackish in color & her child regurgitate this milk just after feeding, so she stopped breast feeding. On her comp. breast milk culture was adv. which was found normal. She was treated with *Stanya Shodhana Gana Kashaya* for 3 days in 20 ml dose BD.

Result: Her breast milk appeared white only after 3 days of treatment and baby has not regurgitated milk again.**[85]**

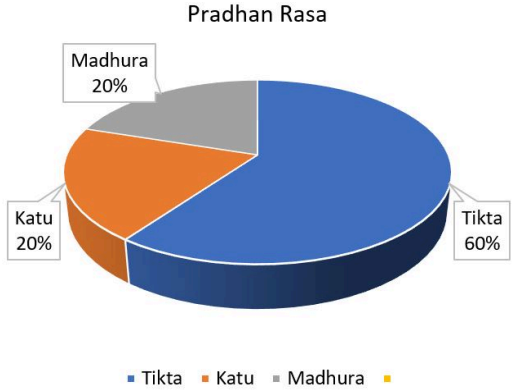

Figure 1: *Stanyashodhana Mahakashaya* drugs with their respective *Rasa* and number.

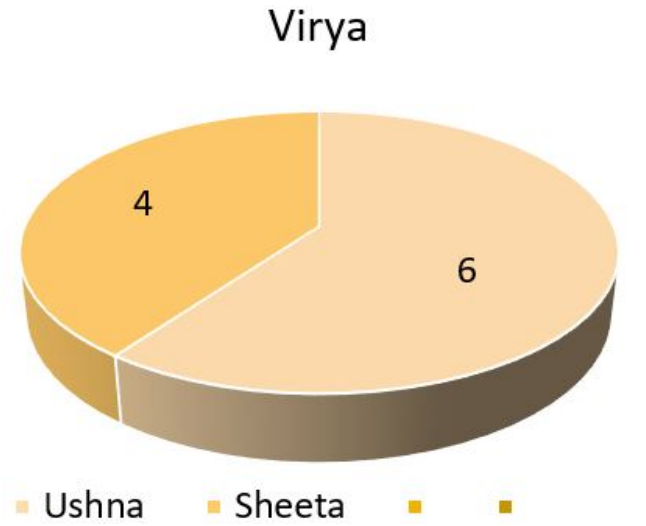

Figure 2: *Stanyashodhana Mahakashaya* drugs with their respective *Virya* and number.

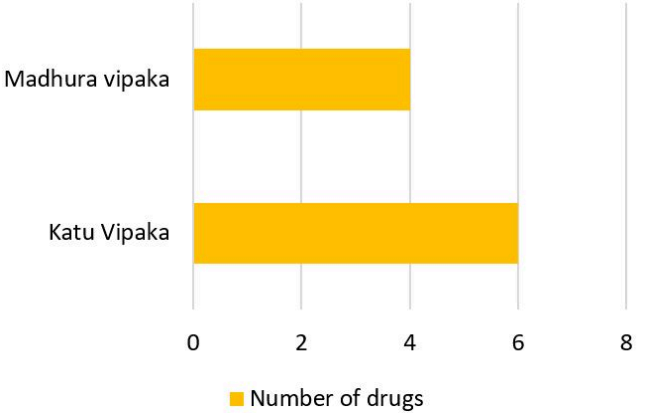

Figure 3: *Stanyashodhan Mahakashaya* drugs with their respective *Vipak* and no.

Conclusion

Neonates are highly susceptible to medication errors and adverse drug events due to their fragile physiology, immature organ systems, and limited ability to metabolize and eliminate medications. This problem can be solved if we treat the mother and thus providing treatment to infants through the *Shodhita* breast milk. This review caves the path for further in vitro and in vivo researches on the role of *Stanyashodhana Mahakashaya* in the treatment of infant diseases which after clinical evidence can become an established solution for the same.

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