



## ***Stanya Kshaya; Ayurvedic Perspective and Role of Herbal Galactogogues***

Gupta Rosy<sup>1</sup> and Chandla Anubha<sup>2\*</sup>

<sup>1</sup>Department of DravyaGuna, S.K.S.S. Ayurvedic College, Sarabha, Punjab, India

<sup>2</sup>Department of PrasutiTantraAvumStreeRog, S.K.S.S Ayurvedic College, Sarabha, Punjab, India

### **Abstract**

***“Lactation is elixir –a gift from the Almighty for little angels”***

The importance of breast milk for the new born is very well quoted in *ayurvedic* classics. *AcharyaCharaka* has quoted that the new born should be put to breast from the very first day of birth. In modern science also the importance of colostrum and breast milk for the new born is well established. Today *Stanyakshaya* (hypogalactia) or *stanyanaasha* (agalactia) is a very common problem, especially with primiparous mothers. The two conditions are together described in *ayurveda samhitas* with their causal factors and *chikitsa*. A number of *stanyajanana*, *stanyavardhaka* drugs as well as *stanyavardhakaahaar* and *bhava* (factors) have been described by *acharyas* and have proved of great significance over the ages. The present study aims to go through the literary description of *Stanyakshaya/stanyanaasha* and to work upon the probable mode of action of herbal galactogogues described therein, based upon their pharmacological properties and chemical composition. Overall study concludes that *stanyakshaya*, occurring as a result of *dhatukshaya* or *agnimandhyata* can be managed **effectively and safely** by herbal galactogogues. In addition to this, these herbs can be used in healthy lactating mothers also to enhance breast milk production in a safer way and regain body strength especially in puerperium.

### **Keywords**

*StanyaKshaya/ StanyaNaasha, Herbal Galactogogues*



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## INTRODUCTION

Lactation describes the secretion of milk from the mammary glands and the time period that a mother lactates to feed her baby. Milk production is essential for optimal feeding of infants, as nutrition at this stage has direct impact on growth, development and health of not only the neonate but also for throughout healthy life. It instils lifetime immunity. According to the *Ayurveda* classics, *stanya* is the *upadhatu* of *rasa dhatu*. After proper digestion of food by *jaatharagni* and *dhatvaagni*, *rasa* is formed. In *sdhyoprasuta*, the sweet essence part of this *rasa* circulating in the whole body gets collected in the breasts and is termed as *stanya*<sup>1</sup>. The preparation for lactation starts during pregnancy. The *aahar* (diet) consumed by *Garbhini* (pregnant woman) is utilized for three main functions: *swasharirposhana* (nourishment of woman's own body), *stanya* (milk) formation and *garbhaposhana* (foetal nourishment).<sup>2</sup> Pristine and continuous affection for the baby stimulates and maintains lactation<sup>3</sup>. Variation or deprivation of above factors can result in *stanyakshaya/stanyanaasha*.

## AIMS AND OBJECTIVES

1) To view *ayurvedic* literature for *stanyakshaya/stanyanaasha*.

2) Probable mode of action of herbs described in *chikitsa* of *stanyakshaya*.

## MATERIALS AND METHODS

Texts of *ayurveda*, Data Base on Indian medicinal plants.

### LITERARY REVIEW OF STANYA KSHAYA/STANYANAASHA:

**Hetu (Causes):** Along with the common overall debilitating factors of parturition like loss of blood and energy, other predisposing factors delineated by our *acharyas* are -

**Dietary factors** - Excessive intake of *rukshaannapaana* (dry edibles and drinks), *langhan* (fasting), *karshan* (emaciation)<sup>4</sup>, *atyapatarpan*<sup>5</sup> (excessive fasting).

**Psychological and behavioral factors**— *Krodha* (anger), *shoka* (grief), *bhaya* (fear), *kaama* (excessive coitus), *avaatsalya* (lack of affection for the infant)<sup>6</sup>, excessive *shodhana karma* (excessive use of purifying measures), *swabhaav*,<sup>7</sup> *punagarbhadhaaran* (re-pregnancy).<sup>8</sup>

### *Stanyakshaya Samprapti* (pathogenesis) :

In *sutika* there is overall *dhatukshaya* *awastha* due to



*pravahanvedna*(labour pains and bear down efforts) and loss of *frakta* and *kleda*during *prasava*<sup>9</sup>. So she gets deprived in *maamnsa*, *bala*(strength), *agni*(digestive power). Again this state is complicated by *apathyasewana*(*atyaapatarpa*na, *rukshaanna*, *shoka*, *bhaya*, *krodha*). As a result there is *vatapradhantridoshaprakopa*leading *torasa dhatukshaya* and consequently *upadhatukshaya* (*stanyakshaya*).

**Stanyakshayalakshana:** Apart from absence or decrease in quantity of *stanya*, *acharya* have also enumerated *Stanamlaanata*(laxity of breasts) as a symptom of *Stanyakshaya*<sup>10</sup>. **Stanyanaashaavumstanyakshayachikitsa:**

**a)** *Sleshmavardhakadravyas*(articles increasing *sleshma/kapha*) should be used in *stanya kshaya*<sup>11</sup>.

**b)** *Sura*(wine), *shaalianna*, *maansa*(meat), cow's milk, *sharkara*(sugar), *aasava*, curd and use of desired articles cure *stanyakshaya*<sup>12</sup>.

**c)** *Vamana*(emesis) karma is contraindicated in *stanya kshaya*<sup>13</sup>.

**Stanyajananaaahaar:**

Diet rich in *madhura*(sweet), *amla*(sour), *lavana*(salt) *rasa*, meat soup<sup>14</sup>.

*Ksheerapaana*(milk intake)<sup>15</sup>, intake of *ghrita* and oil, all leafy vegetables except *siddharthaka*. *Naadishaka* cooked with *gur*(jaggery), *hingua* and *jatiphala*<sup>16</sup>, *narikela*,<sup>17</sup> *lashuna*, *palandu*, *Yava* (barley), wheat, *shaali*, *shashtika*, *kanji*(fermented sour drink), *pinyaka*, *matasya*, *kasheruka*, *shringataka*<sup>18</sup>, all wines except *sidhu madya*<sup>19</sup>.

**Stanyajananaabhava(factors stimulating lactation):**

*Saumnasya*(state of happiness)<sup>20</sup>, avoid exertion and hard work, good sleep<sup>21</sup>, avoidance of *shoka*(grief), *bhaya*(fear)<sup>22</sup>, staying calm, composed and concerned to the baby.

**Stanyajanana and stanyavardhakadrugs:** A number of drugs and preparations are described in the treatment of *stanyakshaya* as per texts:

1. Decoction of roots of *veeran*, *shaali*, *shashtika*, *ikshuvaalika*, *darbha*, *kusha*, *kasha*, *gundra*, *itkata* and *krina*. Drugs which possess *ksheera*(apparent latex) e.g. *gdugdika*<sup>23</sup>.

2. Milk medicated with the decoction of roots of *stanyajanana* drugs<sup>24</sup>.



3. Milk medicated with *maricha, pippalimoola, maagadhi(pippali), shunthi, pathya(haritaki)* and mixed with *gur* and *ghrita*<sup>25</sup>.

4. Milk medicated with *vaajikarand* drugs also improves lactation.

5. Milk medicated with the decoction of stem barks of latex yielding trees like *vata, udumbar etc.* To this milk *sauwarchala, wid* salt, jaggery and *ghrita* are added and then consumed with cooked *shaali* rice. With this preparation lactation is said to be started even in totally dried breasts.<sup>26</sup>

6. Juice or powder of *vidaarikanda, shringataka, vari(shatavari)* mixed in milk<sup>27</sup>.

7. **Vajrakanjika:** *Pippali, pippalimoola, chavya, shunthi, yawanika, shwetaandkrishanjirakas, haridra, daru haridra* and *sauwarchala* salts cooked with *kaanji* is given as per the digestive power. This preparation apart from galactogogue action is *kaphavatashamaka, vrishaya,* increases appetite and also cures *aamavata,* and *makkalashoola*<sup>28</sup>.

**Table 1** Pharmacological Overview of *Stanyajanana* (Galactogogue) Herbs<sup>29</sup>

Sr. no.	Dravya	Rasa	Guna	Veerya	Vipaka	Karma/actions
1.	<i>Ikshu</i>	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vatapittashamaka, kaphavardhaka, vrishya, balyastanyajanana</i>
2.	<i>Vidarikanda</i>	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Balya, vrishya, brihana, stanyavardhak, rasayan</i>
3.	<i>Narikela</i>	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pittashamaka, tender fruit pulp is brinhana, balya</i>
4.	<i>Shatavari</i>	<i>Madhuratikta</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Rasayana, balya, vrishya, medhya</i>
5.	<i>Shringataka</i>	<i>MadhuraKashaya</i>	<i>Guru Ruksha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vrishya, balya, sara, paushtika, deepana, prajasthapana</i>
6.	<i>Yashtimadhu</i>	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Shothahara, nadibalya, medhya, vatanulomana, rasayana, balya,</i>
7.	<i>Kasha</i>	<i>MadhuraTiktaKashaya</i>	<i>LaghuSnigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Stanyajanana, vrishya, vajeekarana, pittahara, balya</i>
8.	<i>Shali</i>	<i>MadhuraKashaya</i>	<i>LaghuSnigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Balya, brinhana, vrishya, ruchya</i>
9.	<i>Shunthi</i>	<i>Katu</i>	<i>LaghuSnigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Shothahara, nadiuttejaka, vatashamaka, deepana, paachana, vatanulomana, prasavottaradaurbalyhar, vrisya</i>
10.	<i>Pippali</i>	<i>Katu</i>	<i>LaghuSnigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Medhya, vatahara,</i>



						<i>deepana, raktashodhaka, vrishya, balya, rasayana</i>
11.	<b>Haritaki</b>	<i>Kashyatikta</i>	<i>LaghuRuksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vranashodhana, vranaropana, nadibalya, deepana, pachana, srotah –shodhana, Garbhashayashothahara, rasayana</i>
12.	<b>Palandu</b>	<i>MadhuraKatu</i>	<i>Guru Snigdha Teekshana</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vatahara, balya, vrishya, agnivaradhaka, medhya</i>
13	<b>Dugdika</b>	<i>KatuTikta</i>	<i>GuruRuksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Anulomana, krimighna, raktashodhaka, vrishya</i>
14	<b>Maricha</b>	<i>Katu</i>	<i>Laghu, Teekshana</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana, pachana, lekhana, nadibalya, vaatanulomana, srotahshodhana</i>
15	<b>Hingu</b>	<i>Katu</i>	<i>Laghusnigdha, sarateekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vatahara, deepana, pachana, rochana, vaajeekarana, balya</i>
16.	<b>Lashuna</b>	<i>Katu, madhuralavana, tiktakashaya</i>	<i>Snigdha, teekshana, picchila, guru, sara</i>	<i>Ushna</i>	<i>Katu</i>	<i>Rasayana, vrishya, balya, medhya, brinhana, pachana</i>
17	<b>Shwetajeer aka</b>	<i>Katu</i>	<i>Laghu, ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana, pachana, vrishya, balya, stanyajanana</i>
18	<b>Krishna jeeraka</b>	<i>Katu</i>	<i>Laghu, ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Deepana, paachana, vatanulomana, stanyajanana, garbhashyashodhaka</i>
19	<b>Kusha</b>	<i>TiktaMadhura</i>	<i>Laghu, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Nadibalya, deepana, pachana, stanyajanana</i>
20	<b>Veerana /khus</b>	<i>TiktaMadhura</i>	<i>Ruksha, laghu</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kapha pitta shamaka, deepana, pachana</i>
21	<b>Yava</b>	<i>KashayaMadhura</i>	<i>Ruksha, gurupi chchila</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Vatakrit, medhya, agnivaradhaka, lekhana, balya, vrishya</i>
22	<b>Vata</b>	<i>Kashaya</i>	<i>Guru, ruksha</i>	<i>Sheeta</i>	<i>Katu</i>	<i>Kaphapittashamaka, vedna sthapana, vranaropana, garbhashayashothahara, raktarodhaka</i>
23	<b>Sura</b>	<i>Amla</i>	<i>Guru, teekshna, vyavayi, sukshma, vikasi, aash ukaari</i>	<i>Sheeta</i>	<i>–</i>	<i>Stanyapushtikar, medakaphakar, brihman, deepana, grahi</i>

From above table it can be interpreted that some drugs are of sheetaveerya-

madhuravipaka, some are ushnaveerya-madhura vipaka, some drugs are ushan



veerya and *katu vipaka* while few are *are dhatupushtikar, balya,deepana-sheetaveerya-katuvipaka*. Most of the drugs *are paachana*.

**Table 2** Chemical constituents and actions of herbal galactogogues<sup>30</sup>

Herb	Part used	Botanical name	Chemical constituents	Actions/uses
<i>Shwetajeeraka</i>	Fruit	<i>Cuminumcyminum</i>	Cuminyl alcohol, 1-8 cineol, D-glucopyranoside	Fruit is aromatic, sweet, astringent, carminative, anti-inflammatory, galactogogue, tonic, uterine and nervine stimulant
<i>Krishna jeeraka</i>	Fruit	<i>Carumcarvi</i>	Volatile oils(45-65% carvone, limonene) fixed oil, resin	Stimulant, carminative
<i>Vidarikanda</i>	Tuber	<i>Pueraria tuberosa</i>	Carbohydrates 64.6%, proteins 10%	Nutritive, aphrodisiac Galactogogue
<i>Narikela</i>	Fruit	<i>Cocosnucifera</i>	Albumin, globulin(kernel protein), prolamine fractions and aminoacids	Antiviral, antibacterial, immunological, antifungal
<i>Shatavari</i>	Root	<i>Asparagus racemosus</i>	Protein, saponins, carbohydrates, crude fibre mucilage(glucose galacturonic acid)	Nutritive, tonic, demulcent, galactogogue, aphrodisiac
<i>Shringataka</i>	Fruit(nut)	<i>Trapanatans</i>	Arabinogalactan, 1-4 linked galactopyranose, galacturonic acid residues, gallic acid, citric acid, tannin	Fruits are nutritive, sweet, tonic, Galactogogue, haemostatic, aphrodisiac, tonic
<i>Yashtimadhu</i>	Root	<i>Glycyrrhizaglabra</i>	Glycyrrhizine, licoagron, isoflavones, licoamarin, quercetin, isoliquiritin, glycyrrhizic acid	Roots are sweet, refrigerant, tonic, demulcent, aphrodisiac, haemostatic
<i>Kasha</i>	Root	<i>Saccharumspontaneum</i>	Protein, calcium, phosphorous, hydrocyanic acid glycosides	Aphrodisiac, Galactogogue, astringent, emollient, haemostatic and tonic
<i>Shali</i>	Fruit, root	<i>Oryzasativa</i>	Seeds contain starch, glucose, dextrin, fructose, galactose, maltose, albumin, alpha beta globulins	Grains are sweet, oleaginous, demulcent, aphrodisiac, carminative, Galactogogue, tonic
<i>Shunthi</i>	Rhizome	<i>Zingiberofficinale</i>	Myrcene, limonene, cineole, curcumene, serine, glycine, cysteinevaline	Dried ginger is emollient, appetizer, aphrodisiac, carminative
<i>Pippali</i>	Fruit, root	<i>Piper longum</i>	Alkaloids- piperlongumine and piperlonguminine and two sesquiterpenes(essential oil from dried fruit), piperine, pipartine, an unidentified steroid, glycosides, sesamin	Root is bitter, thermogenic, tonic, digestive. Dried spikes are aphrodisiac, carminative, tonic, digestive, emollient and antiseptic
<i>Veerana /khus</i>	Root	<i>Vetiveriazizanioides</i>	Vetivone, vetiverol	Stimulant, aromatic, stomachic
<i>Haritaki</i>	Fruit	<i>Terminaliachebula</i>	Antraquinone glycoside, chebulinic acid, tannic acid, vitamin C, linoleic, oleic, palmitic and stearic acids	Antimicrobial, antifungal, antibacterial
<i>Hingu</i>	Oleo-gum-	<i>Ferula foetida</i>	Alpha-pinene, monoterpene, myristic acid, limonene, eugenol, cardinal	Oleo-gum-resin is antispasmodic, aphrodisiac,



	resin			laxative, nervine tonic
<b>Dugdika</b>	Whole plant	<i>Euphorbia thymifolia</i>	Epitaraxerol, n-hexacosanol, euphorbol	Astringent, bitter, demulcent, aphrodisiac, antihelminthic stimulant
<b>Maricha</b>	Fruit	<i>Piper nigrum</i>	Piperide, piperine, citronellol, cryptone, beta alanine, arginine, serine	Acrid, bitter, carminative, digestive, aphrodisiac
<b>Kusha</b>	Root	<i>Desmostachya bipinnata</i>	Volatile oils resins, amino acids calcium salts, iron	Galactagogue
<b>Yava</b>	Seed	<i>Hordeum vulgare</i>	Cyanogenic glycoside, butyronitrile, pangamic acid, protein, carbohydrates, calcium, phosphorus, iron	Seeds are astringent, demulcent, emollient, intellect promoting, aphrodisiac, tonic, digestive
<b>Palandu</b>	Bulb	<i>Allium cepa</i>	Carbohydrates, Bioflavonoids, quercetin myricetin	Stimulant, aphrodisiac
<b>Rasona</b>	Bulb	<i>Allium sativum</i>	Amino acids (Cysteine, histidine, lysine, alanine, arginine) aspartic acid, sulphur, compounds, enzymes	Carminative, stimulant, diuretic
<b>Vata</b>	Stem bark latex aerial root fruit	<i>Ficus bengalensis</i>	Leucanthocyanin, flavonoids, quercetin-3-galactoside, rutin, beta-sitosterol	Astringent, styptic, tonic, anti-inflammatory

Above table clearly shows that most of the herbs are broadly rich in protein, carbohydrates and other essential minerals and are nutritive, tonic, aphrodisiac, carminative, digestive and stimulant.

## DISCUSSION

Galactagogues 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* mentioned in *ayurvedic* classics it can be derived that ***Stanyakshaya* and**

***Stanyanaasha* is a condition occurring due to four main factors:**

1. *Rasa dhatukshaya*
2. *Agni mandhyata* (jatharagni and *rasdhatvagnimandhyata*)
3. *Stanavahasrotoavrodha*
4. *Maansikabhava* (*shokabhaya-avaatsalya*)

**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. and drugs listed from number 1-8 in table 1

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 mandhya*

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 listed in table 1 from 9-12 act on *rasavahi srotas* and *rasagni* by their *ushnaveerya* and *madhuravipaka*. Being *ushna* in *veerya* these are *uttejaka* (stimulant), *agnivardhaka, deepana-paachana, srotosodhaka, shothahara, vatanulomaka,* and being *Madhura* in *vipaka* are *vrishya, rasayna, dhatuwardhaka*.

## 3. Drugs acting on *Stanavahasrotoavrodha*

a) Drugs listed 13-18 numbers in table 1 are *ushnaveerya* and *katuvipaka*. These are

*srotosodhaka, agnivardhaka, aampachaka, vaatanulomaka, deepana, paachna, vrishya, balya, stanyajanana*. These specifically work on *jatharagni* and *rasadhatvaagni*. There by stimulating proper formation of *rasa dhatu* and *upadhatu* (*stanya*). Also these herbs being *srotosodhaka*, clear the obstruction if any, in *stanavahasrotas* and thus ease the process of galactokinesis. All *ushnavirya* and *KatuVipaka* drugs may also have hormone stimulating action.

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

## 4. Drugs acting on *Maansikabhava*

a) Some of the herbs quoted in *stanyakshayachikitsa* are also *medhyae.gshatavari, yashtimadhu, pippali, palandu, lashuna, yava* and thus may relieve the deep rooted stress, one of the main cause 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*, mode of action can be interpreted as:**





a) 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*, *hingula*)

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 states 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. Clinical trials have demonstrated that root powder of *shatavari* increases the prolactin levels and promotes the growth of mammary tissue<sup>31</sup>.

## CONCLUSION

Galactagogue effect of various plants has been studied and there is evidence that milk synthesis can be increased and that most of them are safe in humans<sup>32</sup>. Based upon the

above description it can be concluded that herbal galactagogues play a significant role to cure *stanyanaasha* and increase the quantity of breast milk in safer way, after the other modifiable factors related to proper breast feeding technique (including frequency, proper attachment and thoroughness of breast emptying) have been corrected. Further, in addition to enhance the quality and quantity of *stanya*, these herbs can also be used in healthy lactating women to regain the body strength lost during pregnancy and labor.



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