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CLINICAL STUDY TO EVALUATE THE EFFICACY OF CHANDRASHOOR AS A STANYAJANAKA IN STANYAKSHAYA

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ABSTRACT

Breast milk is the best nutrition, a mother can give to her child feeding the child is the fulfilling and gratifying experience for a mother. The child should be breastfed exclusively for first 6 month after birth,but when amount of breast milk decreases is inadequate, it becomes very worrying. *Ayurveda* describes decreased breast milk as *stanyakshaya*. Adequate lactation is being defined as secretion of 300 ml daily by 5th day and 480 ml by 10th day. If this amount is not achieved a baby of normal weight will not be adequately feed and such a situation is termed clinically as Agalactia. The clinical study has been designed to evaluate the *stanyajanana* action of *chandrashoor* based on its *karma pusthi* and *vriddhikarna* by help of prolactin hormone test, baby weight and other criteria. Clinical study was conducted in 20 patients attending OPD of Department of *Prasuti* and Stree*roga* Grameen Ayurvedic Medical College Hospital and Research Centre Terdal, Government Hospital Terdal and Survey.The Patients were administered with *chandrashoor Beeja* 10 to 15 gm as a *kashaya* for 15-20 day. The Patients were followed up for 15 day all the patient completed the treatment and No adverse effect were reported during the treatment and improved in the clinical symptoms and overall statistical significance was observed.

KEY WORDS

Stanyakshaya, Stanyajanana, Prolactin, Breast milk, *Chandrashoor Beeja*

INTRODUCTION

It is widely recognised that breast feeding is the best nutrition for human infants. Breast milk is the optimal food for all most all the infants in the first year of life. The knowledge regarding breast milk is unique in Ayurveda Physiology of Stanya Formation-

Ayurvedic classics unanimously the effective establishment of lactation occurs only after 3 days of parturition. Stanya is *upadhatu* of *Rasadhatu*.

Seat of *rasadhatu* is *hridaya*. *Hridaya* with is *rasadhatu* is the prime centre of psyche (*mana*) and soma (*shreera*) Co-ordination. Reference of *nidra*, *unmada*, *apasmara*, *hridroga*, *pandu*, etc . Reveal this fact. So,the function of rasadhatu and *stanya*has both psychic and somatic component. So *stanyapravrithi* is a psychological phenomenon. According to *Ayurveda* the cause of *stanyakshaya* includes psychological conditions of mother such as *krodha*, *shoka*, *Bhaya*, *irsha*, *Avatsalyatavat* and *ahara*.

Hence it is necessary to collect documentary evidence of these dietary supplements to study galactagogic activity clinically.Present study is a step to collect evidence-based data of *Chandrashoor kashaya* in lactation deficiency clinically.

So, for the *kashaya* of *Chandrashoor* play important role in *stanyakshaya* which is also act *garbhashayashodhaka* without any side effect?

OBJECTIVES OF THE STUDY

The *stanyakshaya avastha* is termed as a very worrying. Such subjects should be treated with the use of soft, sweet, cold, pleasing and gentle drugs dietetics and behavior.As *chandrashoor* are having these qualities they can be used inManagement of *stanyakshaya*.

AIMS-

- To evaluate the effect of *chandrashoor beeja kashaya*
- To assess the efficacy of *chandrashoor* as a *stanyajanaka*
- To improve the health of mother and baby by herbal preparation

DRUG REVIEW

Drug Name- *Chandrashoor* (Garden Cress seeds) Latin Name- *Lepidium Sativum*

Vernacular Name-Aalavi, Haliv, Garden Cress, Candrika, Chansur

Properties as per Ayurveda-

- *Rasa- Katu, Tikta*
- *Guna – Laghu, Snighda, phichila*
- *Virya- Ushna*
- *Vipaka – katu*
- After Digestion *Rasa-Kashaya*
- Effect on dhatu – *Rasa, Rakta, Mansa, Meda, ShukraVardhka*
- Effect on Dhosha – *Kapha-vataghana*
- Karma- Balapustivivardha
- Chemical Composition-

Iron, Calcium, Folic acid in addition to vitamin A and C. It contains higher amount of prolactin (25%) Most abundant amino acid is glutamic acid among essential amino acid. Flavonoids sterols as chief phytochemicals constituents, they contain phytochemicals. Which mimic oestrogen to some extent Intake of these seeds stimulates milk production in lactating mother.

Drug Source-

The *chandrashoor beeja* is collected from pharmacy of Grameen Ayurvedic Medical College Hospital and Research Centre, Terdal.

DISEASE REVIEW

Hetu

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*, *langhan*, *karshan*, *atyapatarpan*.

Psychological and behavioral factors

Krodha, *shoka*, *bhaya*, *kaama*, *avaatsalya*, excessive *shodhana karma*,*swabhaav*, *punagarbhadhaaran*.

StanyakshayaSamprapti –

In *sutika* there is overall *dhatukshayaawastha* due to *pravahanvedna* and loss of *Rakta* and *kleda* during *prasava*. So, she gets deprived in *maamnsa*, *bala*, *agni*. Again, this state is complicated by *apathyasewana*, (*rukshaannapaana*, *shoka*, *bhaya*, *krodha*). As a result, there is *vatapradhan tridoshaprakopa* leading to *rasa dhatukshaya* and consequently *upadhatukshaya (stanyakshaya*).

Stanyakshayalakshana –

Apart from absence or decrease in quantity of *stanya*, *acharyas* have also enumerated *Stanamlaanata* (laxity of beasts) as a symptom of *stanyakshaya.*

MATERIALS AND METHODS

MATERIALS

SOURCE OF DATA

The present study has been conducted by selecting patients from OPD Department of *StreeRoga* and *Prasutitantra* of Grameen Ayurvedic Medical College Hospital and Research Centre Terdal, Government Hospital Terdal and Survey.

The Patients were screened on clinical grounds and routine laboratory, Investigations to establish the nature of breast problems were done.

METHOD OF PREPARATION OF *CHANDRASHOOR BEEJA KASHAYA*

1 Part drug + 16 Part water = Reduced 1/8 Part

INGREDIENTS

Chandrashoor beeja– 1 Part

(15 to 25 gms) - (1 ½ tablespoon)

Water – 16 Parts

Prakshepaka Dravya

Guda/ Jaggery

Method of Preparation

The seeds of *Chandrashoor* soaked in portable water overnight. On next day the mixture is heated on *Mandagni* with continuous stirring till it reduces up to 1/8th part. The mixture is filtered through cloth / without filter and the obtained product is used for therapeutic administration with *Guda*as a *prakshepakadravya.*

Mode of Administration of Drug

Pathyakalpana – *Chandrashoor beejakashaya Matra*– 1 *Phala [48 ml]*

Time of administration- Morning hours

Empty stomach

Duration – 15 days

Anupan– *Guda*/ Jaggery

CRITERIA FOR SELECTION OF PATIENTS

CLINICAL SOURCES

Patients will be randomly selected from OPD, OPD of Grameen Ayurvedic Medical College, Hospital & Research Centre Terdal and Government Hospital Terdal, Survey.

INCLUSION CRITERIA

Patients ready to permit the study

Para- 1 and para - 2

Patient of post-natal period

Between 18 to 35 years

EXCLUSION CRITERIA

Grand-multipara

Patients suffering from chronic disease

Patients having twins' baby

After post-natal period

SELECTION OF PATIENTS

ASSESSMENT

The assessment will be done on the basis of-

- Prolactin hormone levels
- Assessment of lactation failure
- Small size of breast
- Assessment of milk ejection
- Breast feeding frequency
- Breast engorgement
- Baby weight gain
- Sleep of baby
- Cry for demand feeding
- Bowel opening

SUBJECTIVE CRITERIA

Even by darshan ,*sparshana*, and *smarana* of the baby there is absence of milk secretion.

OBJECTIVE CRITERIA

Laxity of breast absence of milk secretion.

CRITERIA FOR DIAGNOSIS

DIAGNOSTIC CRITERIA

Patient will be diagnosed based on signs and symptoms mentioned in classics and supplemented with signs and symptoms of *stanyakshaya*.

INVESTIGATION

CBC

Hormonal assay of prolactin

OBSERVATION

20 Patients were selected randomly the Research work. All the selected patients were thoroughly examined and diagnosed and selected based on exclusive and inclusive criteria.

The assignment revealed the following statistics. As these tables and graphs are self-explanatory, no further description is given.

Criteria for assessment of statistical significance

- P > 0.05 is 'NS' (Non – significant)
- P<0.05 and >0.001 is 'S' (significant)

- P< 0.001 is 'HS' (Highly significant)

RESULTS

Subjective Parameter

1. Prolactin hormone level

One has high level of prolactin comparing to others. Prolactin level

Prolactin level	Mean	Std. D	t- value	P value
Before treatment	102.31	12.72	-52.125	<0.001
After treatment	128.00	11.75		

Out of 20 Patients, by the end of the treatment there was marked improvement in prolactin level in 19 cases.

Symptoms

(lactational failure, cessation of milk formation, small size of breast)Out of 20 patients, 6 patients had 3 symptoms, 10 patients had 2 symptoms, 3 patients had 1 symptoms & 1 patient had no symptoms.

After complete treatment, 11 Patients got complete relief, Patients have 1 symptom, and 2 Patients had 2 symptoms.

Symptoms Grade	Before treatment	Before treatment %	After treatment	After Treatment %
0	6	30.0	0	0.0
1	10	50.0	2	10.0
2	3	15.0	7	35.0
3	1	5.0	11	55.0
Total	20	100.0	20	100.0

Milk Ejection

Out of 20 Patients 9 had no ejection, 8 had drop by drop ejection and had stream like milk ejection.

After complete treatment 10 have complete relief with force full milk ejection 6 Patients have stream like milk ejection and 4 Patients have drop by drop milk ejection.

Milk ejection Grade	Before treatment	Before treatment %	After treatment	After Treatment %
0	9	45.0	0	0.0
1	8	40.0	4	20.0
2	3	15.0	6	30.0
3	0	0.0	10	50.0
Total	20	100.0	20	100.0

Breast Feeding Frequency

Out of 20 Patients 3 had 2 time feeding per day, 13 had 3 to 5 times feeding per day, 3 had 6 to 8 times feeding per day, and 1 has 9 to 12 times feeding per day.

After complete treatment 12 have been feeding 9 to 12 times per day, 6 have been feeding 6 to 8 times and 2 have been feeding 3 to 5 times per day.

Breast feeding frequency Grade	Before treatment	Before treatment %	After treatment	After treatment %
0	3	15.0	0	0.0
1	13	65.0	2	10.0
2	3	15.0	6	30.0

3	1	5.0	12	60.0
Total	20	100.0	20	100.0

Breast Engorgement

Out of 20 Patients, 8 had no engorgement, 8 had slight engorgement, had moderate engorgement and 1 had severe engorgement with pain.

After complete treatment 9 have severe engorgement with pain, 9have moderate engorgement and 2 have slight engorgement.

Breast Engorgement Grade	**Before treatment**	**Before treatment %**	**After treatment**	**After treatment %**
0	8	40.0	0	0.0
1	8	40.0	2	10.0
2	3	15.0	9	45.0
3	1	5.0	9	45.0
Total	20	100.0	20	100.0

Baby weight

Out of 20 babies by the end of the treatment there was marked improvement in baby weight.

One has more weight improvement comparing to others.

		Frequency	**Percent**
Valid	2	3	15.0
	3	13	65.0
	4	4	20.0

	Total	20	100.0

Baby Weight Different Grade

	Mean	**Std. Deviation**	**t value**	**p value**
Baby wt before treatment	3.64	0.63	-29.993	<0.001
Baby wt after treatment	3.97	0.66		

Sleep of Baby

Out of 20 babies, 8 had 1- 2 hours sleep, 7 had 2-3 hours sleep, 4 had 3-4 hours sleep and 1 had above 4 hours sleep.

After complete treatment, 12 have above 4 hours sleep, 7 have 3-4-hour sleep and1 have 2-3-hour sleep.

Sleep Grade	**BT**	**%**	**AT**	**%**
0	8	40.0	0	0.0
1	7	35.0	1	5.0
2	4	20.0	7	35.0
3	1	5.0	12	60.0
Total	20	100.0	20	100.0

Cry for demand Feeding

Out of 20 babies, 2 had demand feeds before every 1 hour, 3 had demand feeds before 2 hours, 8 had demand feeds after 2-3 hours and 7 had demand feeds after every 3-4 hours

After complete treatment, 12 have demand of feeds before every 1 hour, 7 have demand of feeds before

every 2 hours and 1 has demand of feeds after 2-3 hours.

Cry for demand feeding Grade	BT	%	AT	%
0	7	35.0	0	0.0
1	8	40.0	1	5.0
2	3	15.0	7	35.0
3	2	10.0	12	60.0
Total	20	100.0	20	100.0

Bowel Opening

Out of 20 babies, 13 had semi solid in consistency normal color upto 5-6 times in a day, 6 had watery in consistency and 1 had hard stool.

After complete treatment, 14 have hard stool and 6 have watery in consistency.

Bowel Opening Grade	BT	%	AT	%
0	13	65.0	0	0.0
1	6	30.0	6	30.0
2	1	5.0	14	70.0
Total	20	100.0	20	100.0

DISCUSSION

Stanyakshaya is one of the commonest problems along lactating mother. In India lactational deficiency Is 30- 40 %, Which leads to *kuposhanjanya* disease in children's so, to promote propagate and popularise *Ayurveda*,

Government of India notified celebration of "*Ayurveda Day*" every year on 2021`*Dhanvantari Jayanti*' with Themes of this year is "*Ayurveda For Poshan*". They have ordered all the college of *AYUSH* to organise many events to reduce this *kuposhanjanya* disease.*Stanyakshaya* is common in primipara and age between 20 to 35 years frequently seen in a daily practice.

It is important for us to put more efforts a research priority towards this. Discussion is done on basis of literary as well as clinical works. Discussion are made with respect to each relevant topic under the broad headings.

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 *stantakshaya* and *Stantakshaya* is a condition occurring due to four main factors:

1) *Rasa dhatukshaya*
2) *Agnimandhyata (jatharagni and rasdhatvagnimandhyata)*
3) *Stanavaharsrotoavarodha*
4) *Mansikabhava (shokabhaya-avaatsalya)*

As evident *chandrashoor* has been used for the present study as the drug is known to inherently possess the *stanyajanana* property.

The objective of the study is to assess the *stanyajanaka* action of the drug *chandrashoor* base on the principle of *prabhava.*

In *ShodalaNighantu*one of the ancient texts of *Ayurveda chandrashoo r*is said to be *stanyapushtikruta.*

Chandrashoor is considered as *Balya* or strength promoting.

It contains higher amount of prolactin (25%)

Most abundant amino acid is glutamic acid among essential amino acid flavonoids, sterols as chief phytochemical constituents.

Intake of these seeds stimulates milk production in lactating mother by its *prabhava*.

Discussion on Result

Prolactin Hormone Level

Out of 20 Patients by the end of the treatment there was marked

improvement in prolactin level in 19 cases. One had high level of prolactin comparing to others.

Which shows highly significant action of drug (P < 0.001) & (t -52.125) lactation deficiency with mean difference after 15 days is ± 26.6

Baby weight

Out of 20 babies by the end of the treatment there was marked improvement in baby weight.

One has more weight improvement comparing to others.

Which shows highly significant action of drug (P<0.001)And(t - -29.993) on weight and development of Baby. With mean difference after 15 days is ±0.330 kg.

CONCLUSION

Lactation failure is a common problem faced by an obstetrician.

The advanced modern therapies have not yet fully cure and more side-effects and we need more effective drugs without development of tolerance.

Significant & Long-term health benefits are associated with breastfeeding for the individual mother, baby & society.

Breast feeding is the ideal way to feed babies. Breast milk serves both as a source of nutrition and immunological support for the developing infant.

In this study *chandrashoor*was tried in the case of lactation

deficiency and uniform results were obtained.

During this study *chandrashoor* showed good result in increasing prolactin level & relieving the subjective parameters in mothers viz. lactation failure, cessation of milk formation, milk Ejection, breast feeding frequency, breast engorgement, in babies' improvement in weight, sleep of baby, cry for demand feeding, bowel pattern after 15 days.

During this study no adverse reaction & toxicity is observed as safety parameters were within normal limit during the study and overall compliance to the treatment was good.

On the basis of above observation, it may be recommended that this *chandrashoor beeja Kashaya* is a safe and effective in the management of lactational deficiency (*Stanyakshaya)*

This study provides substantial evidence that *chandrashoor beeja Kashaya* can be used as a treatment for improvement of breast milk secretion.

Thus, it is concluded that it is an ideal drug for lactation deficiency problem & in Cases it may be useful.

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