

A CLINICAL STUDY TO EVALUATE THE EFFICACY OF MANDURA BHASMA IN GARBHINI PANDU

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ABSTRACT

Pregnancy is a unique joyful experience in every woman's life. It is associated with many physiological alterations, Anaemia is one among them. There is apparent fall in Haemoglobin concentration due to Haemodilution which leads to state of Anaemia. If this condition is not identified and treated in time, it will lead to fetomaternal complications. Conditions are seen like *Garbhini Pandu* which can be correlated with Anaemia in pregnancy. In Ayurveda, direct reference regarding *Garbhini Pandu* is not available. However *Acharya Kashyapa* has mentioned any disease can occur in *garbhini* should be treated like general principle line of treatment. *Garbhavasthajanya pandu* need to be treated like *samana pandu chikitsa*. As *shodhana* is contraindicated in pregnancy appropriate *shamana* treatment is adopted using *Mandura bhasma* along with advice of proper *Pathya ahara vihara*. *Mandura* is a potential Iron compound explained in the context of '*Lohas*' in classics which is safe and beneficial during pregnancy hence *Mandura Bhasma prayoga* is considered as a trial drug to evaluate its efficacy.

Keywords: *Garbhini pandu*, Anaemia, *Pathya ahara vihara*, *Mandura bhasma*.

INTRODUCTION

"Apathyaanaam mulam naaryaha"

Woman indeed is the source of human progeny. When protected, she protects the progeny. Woman undoubtedly is the ultimate source of human progeny. The continuity and health of the society as well as universe depends upon her. Hence prime importance has been laid upon her health care in Indian *shastras* due to her role in giving birth to *shreyasi praja*¹ - a progeny which is physically, mentally, socially as well as spiritually healthy.

In *Ayurveda* great importance has been given to *Garbhini paricharya* including *pathya apathya* to protect the growing foetus and mother, to ensure optimum nourishment to both. Pregnancy is a demanding stage. The foetus is completely dependent on the mother for its nutrition, which is necessary for its growth and development. Once conception occurs, following *garbhini masanumaasika paricharya*, avoidance of *garbhopaghatacara bhavas* protects and nourishes the foetus. Whatsoever diet is consumed by pregnant woman is digested

by *agni* and *rasa* is formed. *Rasa* formed from *ahara rasa* nourishes the body of woman and foetus as well as contributes to the formation of *Stanya*. “*Rasajashchayam garbhaha*”(ch.sha.3/12). *Acharya Charaka* has quoted that *rasa* contributes for the formation of *garbha*. Due to this dependency, mother faces many deficiencies. He has also described “*Pandu*” as one among *rasa pradoshaja vikara*² and is a *santarpanottha vikara*³.

From the 5th month onwards *garbhini* becomes emaciated and suffers from *bala varna haani* as explained by *Acharya Charaka* and *Kashyapa*⁴. It is due to lack of nourishment of maternal *dhatu* as the *rasa dhatu* from the mother is driven to nourish the foetus. Physiological changes like *Balavarna haani, klama* are much appreciable during these months. When the woman further engages in *Pittakara ahara*, conditions like *pandu* occur. *Garbhini pandu* as such is not described in *Ayurvedic* classics except in *Kashyapa samhita (ka.khi.10/160)* where there is a passing reference to *Garbhini pandu*. *Acharya Harita* has described *vivarnatva* as one of the eight *Garbhopadravas*⁵. *Kashyapa* has described *Pandu* as a symptom of *garbhini* when he explains *Rakta Gulma*⁶. As *agni* is hampered in *pandu*, *rasa* and *rakta dhatu* formation itself is affected leading to improper formation and lack of supply of *dhatu poshaka rasas* to the growing foetus. Hence the foetus is deprived of the nutrition resulting in mal nourishment.

Keeping in mind the complications, *Pandu* needs to be treated without delay in *garbhini*. The present study is done with *Mandoora bhasma* along with Honey for the period of 60 days which is advised to be taken after food, twice daily in *leha* form by mixing *bhasma* and honey⁷. *Mandoora* is excellent *rakta vardhaka* and *shreshhta* to be used in *Baala* and *garbhini* instead of *loha bhasma* due to its *sowmya guna*. It is *sheetala, deepana, pitta shamaka, rakta vrudhikara, pandu hara*⁸. Correction of *agni*, increasing *rasa dhatu* and thereby increasing *uttarottara dhatu pushti*, reducing *pitta* does the *samprapti vighatana* and thus improving the condi-

tion of the women with optimal nutrition to mother and growing foetus. Specific *pathya ahara vihara* advised during pregnancy helps to strengthen the women and nourishes the growing foetus by reducing *pandu* symptoms. Hence *Mandoora bhasma* was considered for study along with *pathya aahaara vihaara*.

Aim and Objectives

To assess the efficacy of *Mandura bhasma* and *pathya ahara vihara* in *Garbhini Pandu*.

Materials and Methods:

20 pregnant women in 2nd trimester fulfilling the inclusion criteria were selected randomly from OPD and IPD of *Prasooti Tantra Evam Stree Roga* Department of SKAMCH & RC Bengaluru, the sample collection was initiated post approval, from the Institutional Ethical Committee.

Diagnostic criteria:

Patients were diagnosed as per diagnostic criteria of *Garbhini Pandu* which include:

- Patients diagnosed with the symptoms of *Garbhini Pandu* in 2nd trimester including Pallor, Anorexia, and Giddiness.
- Hb% of 8gm% -10gm%

Inclusion criteria:

- Patient with age group of 18-35 years of age.
- Patient in between 12-28 weeks of Gestational age diagnosed with *Garbhini Pandu*.
- *Primi* and *Multigravida*.
- Hb% in between 8-10gm %

Exclusion criteria:

- Hb % below 8gm%
- Any systemic diseases that interfere with course of treatment.

Assessment criteria:

Signs and symptoms were assessed using the following subjective and objective parameters- Pallor, Anorexia, Giddiness, Hb %.

INVESTIGATIONS:

- Blood –Haemoglobin%, FBS- Fasting Blood sugar, Clotting time (CT), Bleeding time (BT).

INTERVENTION:

A clinical study with pre and post test design was conducted on 20 randomly selected patients of *Garbhini pandu* were administered **Mandura Bhasma** powder filled in capsules, patients were instructed to open the capsule and mix with Honey, make a paste and lick. This was given for 60 days.

Dose: powder of **125mg**, 2 times daily licked with Honey, after food for a period of 60 days with *Pathya Aahara* and *Vihaara*.

Preparation of drug:

The best quality *Mandura bhasma* was procured from a certified Pharmacy (Shree dhootapapeshwar Ltd) and was filled in capsules in the dose of 125mg. This was given to the patients advising them to open the capsule and mix with honey, to take twice daily in the form of a paste after food.

Pathya advised:

Ahara-Mixture of *Shali, Shasthika shali, mudga, laja saktu, godhooma*, sugar 1tsp BD along with milk was prepared and given. milk, curds, liquid diet, ghee, butter, *madhu*, rice gruel, *mamsa rasa*, vegetable oils, sugar, jaggery, dry fruits, cereals millets, green leafy vegetables, vegetables like beet root, carrot, fruit juices like watermelon, grapes, pomegranate, pulses, grains, vegetable soups.

Vihara- daily bath, rest, *Pranayama*, mild exercise, walk, sleep at night.

Apathya- ahara- ushna teekshna food like excessive spicy, *masala* food, garlic, onion, *surana*. *Vihara*-excessive exercise coitus, day sleeping, awakening at night, riding on vehicle, squatting position for longer duration, heavy weight lifting, suppression of urges.

Duration of the study-90days

Pre test - Before treatment

Post test - After 60days

Follow up- 30 days after post test.

CLINICAL ASSESSMENT:

Observations: Various demographic parameters like age, religion, education status, socio economic status, occupation, gravidity, dietary habits, appetite, and dominant rasa consumed along with *dasha vidha pareeksha*, symptoms like pallor, anorexia, giddiness and Hb % in patients.

Assessment criteria:

The results of the treatment were assessed on the basis of Presence or absence of symptoms along with changes in Hb % and analysis was done using Chi square test and student’s ‘t’ test as follows:

Table 1: Assessment parameters

S.No	Symptoms	Present	Absent
1.	Pallor	P	A
2.	Anorexia	P	A
3.	Giddiness	P	A
4.	Changes In Hb% Values	-	-

Table 2: Statistical interpretation

Interpretation	p-value- χ^2	p-value- t test
Non significant	>0.05	>0.05
Significant	< 0.05	< 0.05, <0.01
Highly significant	<0.01, <0.001	p< 0.001

Observation and Result:

Table 3: Effect of *Mandura bhasma* on Pallor as observed in Patients

Before Treatment – After Treatment					
Phase	Present	Absent	X ² Value	P-Value	Remarks
Bt	20	0	36.18	<0.001	Hs
At	1	19			
Before Treatment – Follow Up					
Phase	Present	Absent	X ² value	P-Value	Remarks
Bt	20	0	29.56	<0.001	Hs
Fu	3	17			

Table 4: Effect of *Mandura Bhasma* on Anorexia as observed in Patients

Before Treatment – After Treatment					
Phase	Present	Absent	X ² Value	P-Value	Remarks
Bt	15	5	14.54	<0.001	Hs
At	3	17			
Before Treatment – Follow Up					
Phase	Present	Absent	X ² Value	P-Value	Remarks
Bt	15	5	17.28	<0.001	Hs
Fu	2	18			

Table 5: Effect of *Mandura Bhasma* on Giddiness as observed in Patients

Before Treatment – After Treatment					
Phase	Present	Absent	X ² Value	P-Value	Remarks
Bt	17	3	25.84	P<0.001	Hs
At	1	19			
Before Treatment – Follow Up					
Phase	Present	Absent	X ² Value	P-Value	Remarks
Bt	17	3	16.92	P<0.001	Hs
Fu	4	16			

Table 6: Effect of *Mandura Bhasma* on Changes In Hb%

Within The Group A								
Group A	Mean		Mean Diff	Paired 'T' Test				
	Before	After		Sd	Se	T-Value	P Value	Re
Bt-At	9.23	10.25	1.02	0.98	0.22	4.61	<0.001	Hs
Bt-Fu	9.23	10.72	1.49	1.53	0.34	4.33	<0.001	Hs

DISCUSSION

Rasa dhatu is the foremost *dhatu* which is formed and it is due to *Rasa* and *Rakta dhatu* that the *garbha* forms and gets nourished. Hence for proper growth and development of foetus *Rasa* plays a prime and major role. Obstruction in formation of

rasa can lead to untoward pregnancy outcomes, affecting both mother and foetus⁹.

Due to increased physiological demand there is haemodilution occurring in 2nd trimester. Increased demand of Iron, diminished intake of iron and absorption, disturbed metabolism leads to condition

like Anaemia in pregnancy. Each pregnancy needs approximately 1 gm of extra iron.

Mandura is *Sowmya*, *Sookshma*, *Vrishya*, *Ruchikara*, *Deepana*, *Pitta prashamana*, *Rakta vardhaka*, is mentioned as best for *Baala*.¹⁰ “बालानां अति शस्यते”! (रसामृत २०/१३४) as it is *Sowmya*, it can be used in *garbhini* and *bala*. Due to its *Sheeta guna* it can be used in *pitta vikaras*, *rakta vikaras*. It is said as “*Rakta vrudhikaa param*”.

Effect of treatment:

The effect of treatment on Pallor in patients when compared before treatment to after treatment, before treatment to at follow up gave statistically Highly Significant results with p value <0.001 with Chi-Square values 36.18 and 29.56. This could be attributed to the *Rakta vardhaka* property of *Mandura bhasma*. *Mandura* has *agni deepana*, *ama hara*, *pitta shamaka* and *rakta vrudhikara* property which corrects *agni dushti* and does *ama pachana* clearing the *srotas* thus accelerating the formation of *uttarottara dhatu* by correcting the vitiated *rasa dhatwagni*, also nourishes the growing *garbha* and *garbhini*. Thus pallor is reduced once *samprapti vighatana* takes place.

Effect of treatment on Anorexia, before treatment to after treatment, before treatment to at follow up, the p-value (<0.001) was statistically Highly Significant with chi square values 14.54 and 17.28. *ruchikara* property which increases *ruchi* in patients. *Aruchi* is mainly a *kapha* dominance symptom; *dushita kapha* causes *agni dushti* leading to *mandagni* and *aruchi*. By normalising the vitiated *kapha dosha*, correction of the *manda agni* takes place which relieves the symptom Anorexia. *Madhu* is a good *agni deepaka* and *pachaka*. *Pathya aahaara* like *dadima*, *shali*, *ghrita dadhi*, citrus fruits and vegetables like bottle guard are *ruchikara* and *aruchighna* in their action. Hence *aruchi* symptom has reduced in patients.

Effect of treatment on giddiness within the groups, before treatment to after treatment, before treatment to at follow up the p-value (p<0.001) was statistically Highly Significant with chi square value 25.84 and 22.54. This could be because of *Sheeta veerya*,

Rakta vrudhikara, *Pitta shaamaka* property of *Mandura*. Due to *rakta vrudhikara* property of *Mandura*, the lack of oxygen supply and blood supply to brain is rectified and ensures proper blood supply to Brain, carrying good amount of oxygen reducing the symptom of Giddiness. '*Rajahapittaanaalaat Bhramaha*' *bhrama* is due to *pitta* and *vata prakopa*. *Deepana* property of *Mandura* and *Madhu* ensures proper formation of *Rasa dhatu* and *Rakta dhatu* which helps to reduce Giddiness which is mainly due to *Raktaalpata*. *Shali*, *dadhi*, *takra*, *navaneeta*, *dadima*, *amalaki* and *laghu aahaara* increases *agni* and ensures optimal *dhatu* formation and *Rakta* formation which provides adequate blood supply to all organs including Brain reducing *Bhrama*.

Changes in Hb% before treatment to after treatment, before treatment to at follow up was statistically Highly Significant with p-value (p<0.001) with chi square values 4.61 and 4.33. this could be because of the *Rakta vrudhikara* property of *Mandura*. It is mentioned that *Mandura* is “*Rakta vrudhikaram param*”. *Mandura* is Ferric Oxide, which directly acts as iron supplement to body by increasing the Haemoglobin level. *Mandura* has *deepana* property which enhanced the optimal functioning of *agni* correcting the *agni dushti*, increasing *Rasa dhatu* formation and there by *Rakta dhatu* formation. Once *Rakta dhatu* is formed in body the Haematocrit values increase automatically. Hence Hb% is increased in the body due to the effect of *Mandura bhasma* along with *Madhu* which also contributes towards it, *pathya ahara* explained are rich source of Iron.

CONCLUSION

Pandu is a common condition occurring in pregnancy which is seen more in younger age group, multi gravidas, lower economic people and lower status of education. Improper food habits, habits of excessive intake of *Amla katu rasa* food, stress, lack of knowledge regarding nutritional supplements are some of the causes for *Garbhini Pandu* as seen in the present study.

Mandura bhasma with *Pathya aahara vihaara* showed Highly Significant result in parameters like Pallor, Anorexia, Giddiness, changes in Hb%. *Pathya aahara vihaara* like *Dadima, amalaki*, melons, grapes, green leafy vegetables, cereals pulses, milk, ghee, butter milk have essential nutrients required for the nourishment and development of foetus. *Mandura Bhasma* is mainly a iron supplement. *Mandura* has *Rakta vruddhikara, deepaka, ruchikara, pitta shamaka* property which does *ama pachana*, correction of mandagni, vitiated *doshas* and ensures adequate nourishment to growing foetus by *uttarottara dhatu* formation. Due to its Hematogenic and Haematinic action, the red blood cells production is enhanced along with Hb level thereby increasing oxygen carrying capacity of cells. Increased blood supply and oxygen supply to vital organs like brain reduces the symptom Giddiness. Hence *Mandura bhasma* was found to be effective in treating *Pandu in Garbhini* by increasing the Hb level in patients by reducing the symptoms like Pallor, Anorexia and Giddiness.

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