AYUSHDHARA
ISSN: 2393-9583 (P)/ 2393-9591 (O)
An International Journal of Research in AYUSH and Allied Systems

Case Study

MANAGEMENT OF IUGR WITH *KSHEERA BASTI*

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Article info
Article History:
Received: 01-05-2024
Accepted: 27-05-2024
Published: 10-07-2024
KEYWORDS:
IUGR, *Ksheera Basti,* EFW, SFH, AC, FH, AFI, *Shatavari Churna, Madhuyashti Churna.*

ABSTRACT
Number of cases of IUGR are increasing day by day and its treatment with Ayurveda is well established. Clinical trials are needed to support our treatment modalities on basis of modern parameters. Ayurveda has mentioned therapeutic utility of drugs like *Shatavari, Madhuyashti, Ksheera* and *Ghrita* and various routes of administration are advocated. In this context *Ksheera Basti* is highly recommended in our texts. **Aims and objectives:** To evaluate the efficacy of *Ksheera basti* in management of IUGR. To assess the fetal weight gain and various maternal and fetal parameters after *Ksheera basti* protocol. **Methodology**: Randomized clinical case series with 5 patients **Result**: Improvement was seen in maternal and fetal parameters in all 5 patients. **Discussion:** In studying cases of IUGR, it was found that *Ksheera Basti* is much effective as a treatment protocol for IUGR. Marked improvement was seen in EFW, SFH, AC, FH AFI, maternal weight gain. Hence this therapy has capability to change the scenario and can prove as boom in field of Ayurveda in curing IUGR.

INTRODUCTION
IUGR refers to condition where birth weight is below the 10th percentile of the average for the particular gestational age[1]. Low birth weight is a major problem in India; nearly 3 million low birth weight babies are born annually which accounts for nearly half of the neonatal deaths[2]. 5 females who visited for regular antenatal checkup on their third trimester with period of gestation between 31 to 35 weeks were detected clinically that the fundal height and abdominal girth were less than the period of gestation from LMP. Ultrasonography growth scan report done was suggestive of Asymmetrical Intra Uterine Growth Restriction with estimated fetal weight 1.2 to 1.9kg (below the tenth percentile) suggestive of head sparing IUGR. Close monitoring with non-stress tests and biophysical profile was suggested. The line of management was planned for *Garbhasosha* (IUGR)[1,2,3]

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Quick Response Code	
	https://doi.org/10.47070/ayushdhara.v11i3.1555

Ksheerbasti for three consecutive days was given. The efficiency of treatment was evaluated by the and the patient was informed regarding advantages and disadvantages of the therapy and prognosis of the disease. assessment criteria based on repeat USG with Biophysical profile and clinical examination of the patients before and after treatment. *Ksheerabasti* proved to be an effective management in *Garbhakshaya*.[1,2]

MATERIALS AND METHODS

Case Reports
Description of the Patients: Five pregnant women of gestational age 31 to 35 weeks who presented with mild to moderate IUGR, clinically and Ultrasonographically were selected from OPD of PTSR department of RGGPAC, Paprola. Patients were investigated and ruled out for any, pregnancy induced hypertension, thyroid disorders, gestational diabetes, chronic hypertension.

Table 1: General information of the patients

	A	B	C	D	E
Age	23 YEARS	32 YEARS	24 YEARS	32 YEARS	29 YEARS
LMP	2/2/223	2/12/22	22/11/22	5/12/22	24/10/22
EDD	9/11/23	8/9/23	29/08/23	12/09/23	31/07/23
POG	30WK2D	34WKS 5D	31wk 1 d	31W4D	29wks 3 d

History of Past Illness

There was no history of hypertension, diabetes, blood transfusion, surgical intervention, chronic infectious diseases in all the five patients.

Family History

There was no significant medical, surgical and gynecological history in their family members.

Personal History

Their appetite was good. They used to take mixed; veg and non veg diet. All had normal thirst; 9-10 glasses of daily water consumption. Sleep was sound and undisturbed. Tongue was not coated. Micturition habits were normal; 2-3 times a day and 1-2 times during night. Bowel habits were of regular pattern; once a day. There was no history of constipation and loose stools. There was no history of any addiction.

Past Menstrual History

Age of menarche was between 13 to 15 years**.** No relevant past menstrual history.

Contraceptive History

Nil

Married Life

All were married since 1 to 4 years

Obstetric History

Table 2: Obstetric history

	A	B	C	D	E
Obstetric history	G2P1L1A0	G3P1L1A1	G1P0L0A0	G4P2L2A1	G1P0L0A0

Past Gestational History

No significant history

Examination of Patients

Systemic Examination

General appearance- Normal built, cooperative patients

CNS- Past and present memory was intact, well oriented to time, place and person.

CVS- S1S2 normal, no added sounds

Chest- Bilateral chest was clear, normal vesicular breathing

GIT- Epigastric pain was not present, no anorexia, no vomiting, no hemoptysis, no hemoptysis, no constipation, no loose stool was present

2.10.1.6. General Examination No significant finding

Investigations

Table 7 represent the hematological and serological investigation of the patients. No significant abnormalities were seen.

Treatment Planned

Ksheerabasti was selected for the treatment of *Garbhashosha* as mentioned by Aacharya Sushruta and Vagbhata in Sushruta Sutrasthana 15/16 and Ashtanga Sangraha Sharirasthana 4/17. *Ksheerabasti* is categorised under *Niruha Basti*. It is *Mridu Niruha Basti* and *Balya, Brimhaniya* in action. *Ksheerabasti* was prepared according to the reference mentioned in Chakradutt (*Niruha adhikaar*/ 5,6,7)

Table 3: Contents of *Ksheera basti*

Makshika (Madhu)	80ml
Saindhav lavana	5gm
Ghrita	100ml
Kalka (Shatahva)	50gms
Kwath (Yashtimadhu and Shatavari)	600ml
Ksheera	600ml

Preparation of *Ksheera basti* was prepared as shown in (table no. 4)

Table 4: Method of preparation of *Ksheera basti*

Step 1	*Saindhav, Madhu, Ghrita* and *Kalka* were mixed in the *Kharala* and *Mardana* was done properly
Step 2	*Kwath dravya: Yashtimadu* 75gm *Shatavari* 75gm plus water 1200ml are boiled and reduced to half of the quantity i.e., 600ml
Step 3	*Ksheerapaka*: In 600ml prepared *Kwath*, 600ml milk was added and boiled until the quantity reduced to 600ml
Step 4	*Ksheerapaka* was added in grinded and *Ksheera ksheerabasti* was prepared. The mixture was properly filtered with the help of clean muslin cloth

Treatment protocol

The treatment protocol was planned for 3 days as follows

Anuvasana Basti with *Balyam Tailam*- 60ml per rectal after meal

After two hours *Ksheerabasti* was planned for

1 st day- 600ml

2 nd day- 600ml

3 rd day- 600ml

Route of administration- per rectum

Poorva Karma

For *Ksheera Basti*, the patient is subjected to the following procedures:

1. Light diet was advised to patients
2. Evacuation of the bladder and bowels.
3. *Mridu Abhyanga* was done on the *Kati Pradesha, Prustha,* and *Parshva Pradesha*.
4. Examination of pulse, blood pressure, general wellbeing was carried out.
5. Before the main procedure of *Ksheera basti, Anuvasan basti* with *Balyam tail* was administered two hours prior.

Pradhan Karma

1. Patient was kept in left lateral position.
2. Part preparation was done.
3. Aseptic painting of the rectal area was done followed by draping with aseptic linen towels.
4. 600ml of *Basti* was administered per rectally with the help of catheter attached with enema pot.

Pashchata Karma

1. After administration of *Ksheera basti*, patient was allowed to lie in left lateral position for the time she can hold the *Basti*
2. Patient was allowed for clearance of bowel.
3. Payas made of *Shashti shali* with milk and *Ghrita* was given to the patient after clearance of bowel.

RESULTS

On the basis of assessment criterion (fetal and maternal factors) the results were recorded before and after treatment as shown in Table no.5 and Table no.6

Table 5: Maternal factors before and after treatment

	SFH (BT)	AT	AC(BT)	AT	Maternal weight (BT)	AT
A	29cm	32cmm	87cm	89cm	56kg	59kg
B	29cm	33cm	80cm	82cm	60kg	62kg
C	31cm	32cm	84cm	87cm	54kg	57kg
D	31cm	32cm	88cm	90cm	60kg	63kg
E	30cm	32cm	92cm	94cm	50kg	51.5kg

Table 6: Fetal factors (before and after treatment)

	Placental maturity		HC		AC(F)		EFW		FHR	
	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
A	MG1	MG 2	28W5D	34W5D	27WKS4 d	31WKS6D	1252GMS	2269gms	149bpm	143
B	MG2	MG3	31W2D	34W2D	29WKS	33wk4d	1414gms	2323gms	124bpm	132bpm
C	MG2	MG3	30w3d	34w0d	27w1d	31w2d	1326gms	2082gms	141	137
D	MG2	MG3	31wk2d	35wks	28w5d	32w0d	1377gms	2080gms	132	130
E	MG2	MG3	35w6d	34wks	30w1d	32w2d	1931gms	2264gms	138	140

DISCUSSION

Ksheerabasti acts as *Brimhana Basti* as *Ksheera* is *Madhura*, *Sheeta*, *Snigdha*, *Stanya* and *Pushtikarka* in properties. Both drugs *Madhuyashti* and *Shatavari* used as *Kwath Dravyas* as they are also *Madhura*, *Guru*, *Sheeta, Jeevaniya* and *Brihmana* in properties which helps to improve body weight and fetal growth. *Ksheerabasti* is best *Rasayana* as it contains *Ksheera*, *Ghrita* which are considered as *Nitya Rasayana* by *Acharyas Ksheera* and *Ghrita* are of high nutritional value which contains carbohydrates, proteins, fat and calcium and many antioxidants. *Rasayana* drugs (*Ksheera, Ghrita* and *Shatavari*) acts at the level of Rasa which helps in the nourishment of pregnant woman as well as the fetus.

Mode of Action

Basti (medicated enema) is one among th most important *Panchakarma* therapies which is also considered as "*Chikitsardha*" (half of entire treatments) X ray study revealed that reach of *Asthapana Basti* was maximum upto iliocaecal junction. So *Niruha* may reach throughout the large intestine. The large intestine is supplied by branches of superior mesenteric artery (Caecum, ascending colon, right 2/3 of transverse colon) and branches of inferior mesenteric artery (remaining transverse colon, descending colon, sigmoid colon, rectum and anal canal. The venous drainage from caecum, Ascending colon, Transverse colon, drain into superior mesenteric vein, which will join with splenic vein and form portal vein which enters liver. The venous blood from descending colon, sigmoid colon, anal canal and rectum drain into inferior mesenteric vein; which opens into splenic vein and reaches liver. Superior rectal vein drain into inferior mesenteric vein, middle and inferior rectal vein drain into general circulation through inferior venecava. Gut wall is supplied by both ANS and ENS. In ANS; Sympathetic by fibres arise from spinal cord and ends in ENS; in parasympathetic upto transverse colon by vagus and upto rectum by pelvic splanchnic nerve. Lymphatic drainage of large intestine is from entire colon, proximal 2/3 of rectum to Para aortic lymph node that drain to Cisterna chyli. Remaining rectum and anus can either flow same route or to internal iliac and superficial inguinal nodes. There are numerous references in The gastrointestinal tract is lined with epithelial cells. Drugs must pass or permeate through these cells in order to be absorbed into the circulatory system.

Ksheera: *Ksheera* possesses the properties of *Madhura, Sheeta, Snigdha, Stanya* and is *Pushtikarak*. Due to its *Mridu, Snigdha, Shlakshna* and *Picchila Guna*. It increases *Mamsa Dhatu, Jeevaniya Shakti*, reduces fatigue, cures *Shwasa, Raktha pitta*, helps in healing fractured bones, it is *Satmya* for all *Dosha*. It also acts as *Dosha Shamaka* and *Srotoshodhaka*. Usage of *Ksheera* is highly recommended in certain *Vyadhis* like *Pandu, Amlapitta, Gulma, Udara roga, Yoni roga, Shukra roga, Vata roga. Ksheera* is of high nutritional value which contains carbohydrates, proteins, fat and calcium and many antioxidants

***Madhuyashti*:** *Madhuyashti* (*Glycirrhiza glabra*) is described as *Balya, Shosha, Kshaya* and *Tridosha Shamaka* in *Nighantu Adarsha*. Hydromethanolic root extract of *Glycirrhyza glabra* exhibited marked antioxidant activity in a test tube system. Polyphenolic components of root also acts as potential antioxidants. Glycirrhizin exerts an anti-inflammatory action similar to hydrocortisone and other corticosteroid hormones on being broken down in the gut. Glycyrrhizin have immune stimulant, hepatoprotective and regenerative effect.

***Shatavari*:** *Shatavari* is indicated for promoting fertility in Kashyapa Samhita. *Asparagus racemosus* acts as adaptogenic, rejuvenator, and anti-oxidant which stimulates immune system of the body. It contains Folic acid, calcium, vitamin B6, vitamin C, Vitamin K and Glutathione which are essential for the maternal nutrition and fetal growth. The study on *Asparagus racemosus* extract containing formulations has reported an increase in uterine weight and uterine glycogen without altering serum estrogen progesterone levels in immature rats as against ovarectomized rats used as control. Study also indicates that the phytoesterogen perform its function without enhancing the endogenous estrogen levels by binding directly to the estrogen receptors.

CONCLUSION

Intrauterine growth restriction is one of the cause of intrauterine death and second leading cause of neonatal death. *Ksheerabasti* is an effective preparation which can be safely administered during pregnancy. It has no adverse effect on mother as well as on fetus and the result was encouraging. Hence, to establish this fact, further study of longer duration and on large sample is required

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Cite this article as:
Shivani Katna, Meena Parmar, Seema Shukla. Management of IUGR with Ksheera Basti. AYUSHDHARA, 2024;11(3):59-63.
https://doi.org/10.47070/ayushdhara.v11i3.1555
Source of support: Nil, Conflict of interest: None Declared

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