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MANAGEMENT OF GARBHA SOSHA (IUGR) with KSHEERA BASTI:- A CASE REPORT

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ABSTRACT:

The concept of 'suprajajanana(fetal well-being)' was a prime concern since old era and also in recent era. In classics Garbhashosh is revealed one of the diseases, which can be correlated with intra uterine growth retardation (IUGR) due to its similar pathology and clinical sign and symptoms.IUGR associated with 3-10 % of all pregnancies and it is 2nd leading contributor to perinatal mortality. *Ayurvedic*drugs and preparations are comparatively safe without any untoward side effects. Aim of presenting a case with IUGRis to review the effectiveness of ayurvedic treatment modalities for *Garbhashosh*with respect to IUGR. In the present case a 22-year-old Primigravida who had undergone regular ante natal check-up and detected with Intrauterine Growth Restriction at 32 weeks of gestation. The abdominal circumference of the foetus was found to be less than 10th percentile and EFW is also less than 10thpercentile. She was given Ayurveda management considering it as a case of *Garbhasosha*. She was administered *ShatavaryadiKsheerBasti* along with dietary advises. In the present case adequate weight gain of the foetus was achieved thereby preventing the need for early intervention and patient delivered a full-term female baby weighing 3 Kg by spontaneous vaginal delivery. Baby was having normal Apgar score and didn't require any neonatal intensive care. The current approach proves efficacy of Ayurveda in IUGR and also opens the scope for further research

KEYWORDS: Garbhashosh, Intrauterine Growth Retardation, Ksheera Basti

INTRODUCTION:

In Ayurveda IUGR is considered as *Garbhasosha* as per *Acharya Susruta*.[1] Acharya *Sushruta*has also stated *Garbhashosh* as *Vatabhipannagarbha* and it can be described as underdevelopment or under nourishment of the foetus in utero. Also, Acharya *Charaka* while describing G*arbhavyapadas* like *Nagodar, Upavishtak, Leengarbha*, in*SharirSthana*J*atisutriyaadhyaya*, also explained *Garbhashosh.Garbhakshaya, Garbhasosha, VatabhipannaGarbha* are near to signs and symptoms of IUGR. Clinical features of *Garbhakshaya*are absence of quickening and fundal height less than period of amenorrhoea[1]. In modern science Intrauterine Growth Restriction (IUGR) has been defined as the rate of foetal growth that is below normal in light of the growth potential of a specific infant as per the race and gender of the fetus[2] and causes can be maternal, foetal, placental and unknown causes.[3]Normal baby weight at Sea level is 3400gm, 5000 ft from sea level is 3200 gm, 10000 ft from sea level is 2900 gm.[4] Intra uterine growth restriction is said to be present in those babies whose birth weight is less than the 10th percentile of average for the gestational age and Ponderal index is less than 10th centile.[4] In foetal development normal weight gain at 32-36 wks of gestation is 26.9 g/day and after 36 to 40 week is 24 gm per day.[5]In normal pregnancy Symphysis fundal height (SFH)increases by 1 inch/weeks in 14-32 weeks and abdominal girth increases by 1 inch/weeks after 30 wks. It should be 30 inches at 30 wks. If SFH is lagging equal to or more than 3 cm and HC/AC is also elevated then IUGR is dignosed.[6]95 % of foetal weight gain occurs during last 20 weeks of gestation.

Cause of IUGR may be any foetal structural anomalies, any infection, chronic hypoxia, placental abnormality, maternal infection or diseased condition or some time it may be unknown. Poor maternal nutrition may be a prime cause of IUGR. The most common cause is blood flow to the foetus is compromised.[7]In *GarbhaSosha*or *VatabhipannaGarbha*treatment *BhrimanaChikitsa*is advised.[8]In *Garbhasosha*, the predominant *Dosh*a is*Vata* and *Charka* considers nutrition as causative factor for *GarbhSosha*.[9]*Brimhana* (nourishing therapy) is the line of treatment adopted for pacification of *Vata.*[10] *Kashyapas*tated that *Rasa* either flows slowly or does not flow in *Rasvahanadi*of foetus thus it develops slowly. *Bhavaparakash, Yogratnakara, Vaghbatta* also follows *Susruta*and consider aggravation of *Vayu*as main causative factor for IUGR.For diagnosis of IUGR determination of gestational age is of utmost importance because if date of LMP is not reliable thenUltrasound dating before 21 weeks of pregnancy provides more accurate estimate about gestational age.Clinically,measurement of fundal height and abdominal girth make

diagnosis of IUGR and a lag in fundal height of 3 weeks is S/o mild, 4 weeks s/o moderate and a lag of >6 weeks is s/o severe IUGR.

DESCRIPTION OF PATIENT

A primigravida woman with age 22 years reported the *Prasutitantra* and *Streeroga* outpatient department (OPD) for ongoing regular antenatal check-up (ANC) at gestational age of 32 weeks. On further inquiry it was found that she had her regular ANC check-up in hospital. She took her regular folic acid supplement in first trimester and iron and calcium supplements from 2nd trimester onwards. She was also immunized with two dose of injection Tetanus Toxoid.Her early USG scan was suggestive of live intrauterine foetuswith gestational age corresponding to gestational age from L.M.P. Her anomaly scan was also normal. Now on this ANC visit it was found that her fundal height was less then period of gestation. Her routine blood investigations were also normal as in Table 1. She was advised for growth scan which is suggestive of IUGR. Therefore, she had been treated with ayurvedic*chikitsa* and advised for *ShtavaryadiKsheerBasti*.

Table 1 Routine investigation of patient

PARAMETER	**RESULTS**
Hb	12 g/dl
RBS	98 mg/dl
TSB	0.6mg/dl
DSB	0.3mg/dl
SGOT	20IU/L
SGPT	22IU/L
B. Urea	23 mg/dl
S. Creatinine	0.7mg/dl
S. Uric acid	3.3mg/dl
TSH	1.58uIu/ml
HIV	Negative
HBsAg	NR
VDRL	NR
Hb1AC	4.2

SOURCE : PRIMARY DATA

MENSTRUAL HISTORY

- Age of Menarche – 13 years
- Duration – 2- 3 days
- Interval – 28 - 30 days
- Amount – moderate to heavy
- Associated symptoms – pain, smell and clots during menstrual period not present

CONTRACEPTIVE HISTORY

Nil

FAMILY HISTORY

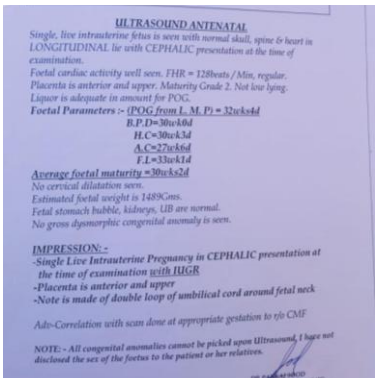
No family history of DM, HTN, TB and thyroid dysfunction. No history of exposure to radiation, any toxin or chemical agent.

OBSTETRIC HISTORY- $G_1P_0L_0A_0$

LMP- 08 Jan 2021

EDD- 09 Oct 2021

Per abdomen examination: - Fundal height- ~28- 29 weeks (less than period of amenorrhea) Lie- Longitudinal with cephalic presentation Foetal heart rate- 132 BPM Uterus feels soft, No contractions, No tenderness, No pain. Her symphysis fundal height is 29 cm.



ULTRASOUND ANTENATAL

Single, live intrauterine fetus is seen with normal skull, spine & heart in LONGITUDINAL lie with CEPHALIC presentation at the time of examination.
Foetal cardiac activity well seen. FHR = 128beats / Min, regular.
Placenta is anterior and upper. Maturity Grade 2. Not low lying.
Liquor is adequate in amount for POG.
Foetal Parameters :- (POG from L. M. P) = 32wks4d
B.P.D=30wk0d
H.C=30wk3d
A.C=27wk6d
F.L=33wk1d
Average foetal maturity =30wks2d
No cervical dilatation seen.
Estimated foetal weight is 1489Gms.
Fetal stomach bubble, kidneys, UB are normal.
No gross dysmorphic congenital anomaly is seen.

IMPRESSION: -
-Single Live Intrauterine Pregnancy in CEPHALIC presentation at the time of examination with IUGR
-Placenta is anterior and upper
-Note is made of double loop of umbilical cord around fetal neck

Adv-Correlation with scan done at appropriate gestation to t/o CMF

NOTE: - All congenital anomalies cannot be picked upon Ultrasound, I have not disclosed the sex of the foetus to the patient or her relatives.

Figure 1 USG before treatment

EXAMINATION OF PATIENT

General and physical examination of patient was done. Her weight was59 kgheight was 160 cm. Her vitals were in normal range. Her obstetric examination revealed that the per abdomen fundal heightcorresponds to 28- 29 weeks with cephalic presentation and foetal heart sound within normal range. Her ultrasonography of obstetric for growth scan showed foetal abdominal circumference less than 10thpercentile and foetal weight 1489 gm along with average foetal maturity 30 weeks 2 days as in figure 1.All these parameters were less than respective gestational age as compared in table 2and suggestive of IUGR.

Table 2 Ultrasonographic parameters comparison with standard parameters

Parameters	Result value (GA by LMP- 32 wk 4day)	Slandered value at respective gestational age 32 week)[28]
BPD	74.6 mm	80.9 mm
H.C	277.9 mm	290 mm
A.C	234.9 mm	274 mm
F. L	54.4 mm	59.4 mm
EFW	1489 gm	1753 gm
FL/AC	23.15	22
HC/AC	1.18	1

SOURCE:PRIMARY DATA

TREATMENT

TREATMENT PLAN

Shatavryadiksheerbasti- contents for each bastiwere following

- ✓ *Go ghrita - 60 ml*
- ✓ *Madhu - 80 gm*
- ✓ *Kalka - shatava 100 gm*
- ✓ *Kwath- shatavri (30 gm) + madhuyashti (30gm)*
- ✓ *Godugdh- 450 ml*

Procedure ofKsheerabasti administration:-

- ✓ Patient should lie in Sims' position (left lateral position one leg extended and other with abdomen)

- ✓ Administered through the r**ectal route** in amount of 450 ml with the constant speed without shaking hand
- ✓ After that patient was advised to retain *Basti*uptomaximum time.
- ✓ *Khseerbasti* with *shatavryadikwath*was given on alternate day for 3 days
- ✓ *Basti pratyagman kaal*- 35 -40 minutes (average for three Bastis given on alternate days)

- Diet after Basti *Partyagamana- Ghrita* + Madhu + rice+ s*harkra*

Diet chart protocol - Food items having sweet[11]or sour taste[12]generally possess nourishing property. Patient was advised diet for nourishment for whole period of treatment.

❖ **DO'S-**

Diet - Meat[13],Milk[14], Ghee[15]**,** egg white, curd[16], butter[17] etc.

Fruit - Tender coconut, draksha[18], wild lemon (*Matulunga*)[19]etc.

Vihara- Lie in left lateral position, 8hours sleep at night and 2 hours rest in afternoon and Yoga (*Anulom, Vilom, Bhramari)*

Mental factors- Cheerfulness/happiness, contentment and reading good and religious literature

❖ **DON'T-**

Diet - Junk food, *Ushana, Ruksha, Tikshana, KatuAahara*[20]

Vihara- Late night sleep, excessive exposure to mobile phone radiations, rigorous exercise

Mental factors- Stress, anger, mental worries

RESULT

Patient was followed up fortnightlyand it was found that fundal height was increasing steadily.The ultrasonography result after 1 month also showed increase in estimated foetal weight. Patient was followed up regularly and delivered a full-term female babyat gestational age of 40 weeks.Baby weight was2.9 kg and APGAR score at 1 min is 8 and after 5 min is 9. By considering the height of this place (3169 feet above sea level) and medium stature of the population the fetal weight at birth was optimum. It has been observed that the average birth weight of babies' range between 2.5 kg to 3 kg in this area.

Table 3 Ultrasonographic parameter after treatment

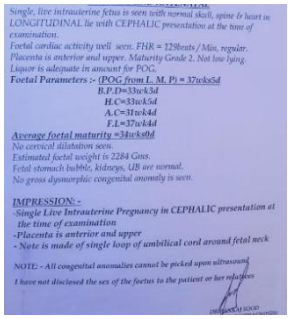

Single, live intrauterine fetus is seen with normal skull, spine & heart in LONGITUDINAL lie with CEPHALIC presentation at the time of examination.
Foetal cardiac activity well seen. FHR = 129beats / Min, regular.
Placenta is anterior and upper. Maturity Grade 2. Not low lying.
Liquor is adequate in amount for POG.
Foetal Parameters :- (POG from L. M. P) = 37wks5d
B.P.D=33wk3d
H.C=33wk5d
A.C=31wk4d
F.L=37wk4d
Average foetal maturity =34wks8d
No cervical dilatation seen.
Estimated foetal weight is 2284 Gms.
Fetal stomach bubble, kidneys, UB are normal.
No gross dysmorphic congenital anomaly is seen.
IMPRESSION: -
-Single Live Intrauterine Pregnancy in CEPHALIC presentation at the time of examination
-Placenta is anterior and upper
- Note is made of single loop of umbilical cord around fetal neck
NOTE: - All congenital anomalies cannot be picked upon ultrasound.
I have not disclosed the sex of the foetus to the patient or her relatives

Figure 2 USG after treatment

Parameters	Result value (GA by LMP- 37wks 5day)	Slandered value at respective gestational age 37 week)
BPD	82mm	88.5 mm
H.C	292 mm	321 mm
A.C	279 mm	317 mm
F. L	64.4 mm	68.6 mm
EFW	2284 gm	2666 gm
FL/AC Raito	23.08	22
HC/AC	1.18	<1

Table 4 Follow up time line table

Visit date	POG by LMP	Fundal height	SFH	FPP
25/8/2021(1st visit)	32 wks 5 days	~28- 29 weeks	29 cm	Cephalic above the brim
10 sep 2021(1st follow up after basti)	35 wks	~31- 32 weeks	32 cm	Cephalic above the brim
24 sep 2021(2nd follow)	37 wks	~34- 35 weeks	32 cm	Cephalic Not engaged
30 sep 2021	38 weeks	~34- 35 weeks	32 cm	Cephalic engaged
15 oct 2021	Delivered female child weighing 2.9 kg			

SOURCE :PRIMARY DATA

DISCUSSION: -

In the case discussed, patient visited us with mild IUGR and with estimated fetal weight was less than 10th percentile suggested by her USG. Her fundal height was also lagging behind from period of gestation. We chose *ShatavryadiKsheer Basti*as line of treatment. After treatment her USG showed increased foetal weight. Her fundal height continuously increased on each ANC visit. Thus, by *Ksheera Basti* we stop furthermore growth retardation and foetal distress. She gave birth to a full-term female child by NSVD with baby weight 2.9 kg and normal APGAR score. IUGR was most similar to *Garbhasosha* mentioned in Ayurveda by *acharya* S*usruta*where *Vata* dosha vitiation is *Nidana* of it. The line of treatment describes *VataShaman*with*Brimhana*therapy. Also,*Sushrata* mentioned *KsheerBasti*and *Medhyaann*in *Garbhkshaya chikitsa*.[21]

Garbhinikarshya is mentioned in the sixth month of pregnancy and also loss of strength and complexion in seventh month.[22]These changes show the foetal development aspect. Thus,*KsheerSarpi* in 6th month and *Madhur AusadhaSidhhaKsheeraghrita*in 7th monthis advised to manage these changes.[23] It is described that lipophilic drugs easily cross placenta by passive diffusion.[24] Thus lipid base substances cross the placenta and correct foetal growth restriction by reaching to fetoplacental circulation.

*Ksheer*is having*Rasayana, Vrishya, Balya, Jivaniya, Stanyakara, Shramhara*properties.[25] Medicated *ksheer*introduced by anal route having more systemic and local effects due to great absorptive capacity and *Vatanulomana. Shatavari*hasantioxytocic, antistress, hypotensive, cardiotonic and vasodilating properties.*Shatavar*i has*Balya,Hridya, Medhya, Rasayana, Vatahar, garbhaposhaka guna*[27](property) and useful in *Kshaya*. *Yashtimadhu*has*Medhya, Vatanulomana, Jeevaneeya, Sandhaneeya, Rasayana, Balya*properties and useful in *Yakshma, Garbhashosha,*[26]*Dourbalya*.

All contents of this *Ksheerabasti* predominantly have *Madhura rasa, Snigdha, Sheeta* and *Guru guna, SheetaVeerya, Madhura Vipaka, Pruthvi-AapMahabhutadhikya, Vata shaman* and *Vata-anuloman* and *Garbhavridhhikar* properties. Also, by *Basti* we correct *Vata dosha* which is responsible for normal *pachkagni*[29]i.e, metabolism. Thus, we enhance metabolism and nutrition to mother and foetus as well as.

Food advised after *Basti Pratyagmana*i.e, milk and ghee are also M*edhyanna* and B*hrimana*and help in *GarbhVirdhi*.

CONCLUSION

In case of IUGR, we can achieve better success rate by following the guidelines mentioned in Ayurvedic texts. In Ayurveda the treatment is done by considering the concept of *NidanaParivarjana*and*VyadhiShamana*. For preventive measures *GarbhiniParicharya*is advised and for curative management (in case of *Garbhshosh*i.e IUGR), *Madhur BhrimaniyaAusadh*along with *KsheerBasti* is advised. Thus, by using Ayurveda we can make a safer approach in rectifying Intrauterine growth restriction of foetus and this opens way to further research in this field.

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