CASE REPORT

Management of IUGR with Pregnancy induced hypertension by Ayurveda Regimen: A Case Report

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ABSTRACT:

A Christain woman aged 29 yrs visited OPD of NIA deemed to be university on (24/04/2021) with the complaint of Amenorrhea 9 months (G2P1A0L1) associated with itching on upper and lower extremities since 3 month. She also complaints of swelling in her leg, which resembles us towards the pedal edema. She also complaints of severe hyperacidity, chest pain on and off, occasional headache since 10 days in the first visit. Her L.M.P.-15/08/2020, E.D.D: 22/05/21 and P.O.G.-35 weeks 6 days. Diagnostic assessment was done by USG and Laboratory investigations and Clinical examination. The findings of USG revealed Single live intrauterine pregnancy of 34 weeks 6 days with mild IUGR, mild oligohydramnios. Loop of cord around neck, Normal fetoplacental blood flow pattern. Placenta was Grade III With calcified. In Ayurvedic classics *lakshanas* of *Garbhakshaya*, *Garbhasosha*, *Vatabhipanna Garbhaare* near to signs and symptoms of IUGR. *Ksheera vasti* was planned along with it oral medications *Avipatikar Churna*, *Pittantak Churna*, *Kapardika Bhasma*, *Shankha Bhasma* and *Gokshura Churnain* combination, *Phalasarp*, *Swarna Vasanta malati rasa* and *Punarnavastak Kwatha*. Patient got relief from Severe oedema. The other complaints like severe hyperacidity, Headache were relieved. Then after her B.P. was 110/70 throughout. Fetal movements were good after *Vasti* procedure due to which patient felt well relaxed. Patient got her labor pain and delivered on 8th May with the weight 2.2kg male child at Government Hospital.

Keywords: IUGR, Pregnancy Induced hypertension, *Ksheera Vasti*, *Punarnavastakkwatha*, *Gokshura Churna*

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INTRODUCTION:

Intrauterine growth restriction (IUGR) has been defined as the rate of fetal growth that is below normal in light of the growth potential of a specific infant as per the race and gender of the fetus. It has also been described as a deviation from or a reduction in an expected fetal growth pattern and is usually the result of innate reduced growth potential or because of multiple adverse effects on the fetus.¹ The incidence of IUGR is six times higher in underdeveloped/developing countries when compared to that in developed countries, and this incidence can be further high in lower- and middle-income countries, as many infants are born in home with no birth records. IUGR is the common end result of maternal, placental, fetal, or genetic factors, and IUGR can also result due to a combination of any of these factors. i.e. Genetic factors, Placental factors, Fetal factors and Maternal factors. Various maternal factors such as age of the mother, inter-pregnancy interval (less than 6 months or 120 months or more), maternal health, behavioral habits, and maternal infection affect the growth of the fetus and are responsible for causing IUGR. Any mismatch between the supply of nutrient by the placenta and the demand of the fetus also leads to IUGR. Fetal malformations, inborn error of metabolism, and chromosomal abnormalities are responsible for IUGR in a few cases. With the recent advances in molecular biology and genetics, the role of various maternal, fetal, and placental genes polymorphisms has become important and has now been implicated as a cause of IUGR. With the recent advances in molecular biology and genetics, the role of various maternal, fetal, and placental genes polymorphisms has become important and has now been implicated as a cause of IUGR.

The guidelines of the Royal college of Obstetrics and Gynaecology (RCOG) recommend the management of these IUGR fetuses including both monitoring and delivery methods.

Some evidence-based interventions have shown to reduce the incidence of IUGR.² The evidence-based proven interventions include balanced energy protein supplementation,³ intermittent preventive treatment of malaria in pregnancy, multiple micronutrient supplementation,⁴ insecticide-treated nets (ITN), anti-platelets for preeclampsia, and smoking cessation.⁵

The other interventions that have been tried by various researchers in mothers who were diagnosed to have IUGR fetus, but met with variable success, are as follows:⁶

➤ Bed rest to mother
➤ Parenteral nutrition to mother
➤ Calcium supplementation
➤ Calcium supplementation for hypertension
➤ Nutritional supplementation to fetus
➤ Antihypertensive for mild to moderate hypertension
➤ Oxygen therapy
➤ Prophylactic antibiotic therapy to the mother
➤ Pharmacological therapy to mother including aspirin, beta adrenergic agonist and atrial natriuretic peptide.

Pregnancy induced hypertension (PIH) is a global problem and it has also complicated approximately 10-17% of pregnancies. It is one of the most common medical problem which requires special cautious in the intrapartum period. It should not be taken lightly. The threshold for treatment is usually a sustained diastolic blood pressure of 110mmHg or higher. Antihypertensive drugs can affect the foetus either indirectly, by lowering uteroplacental blood flow, or directly, by influencing the umbilical or foetal cardiovascular circulation.

PIH is so called as hypertension develops as a direct result of gravid state. This is further classified on the basis of its presentation into.⁷

- With oedema and /or proteinuria, having two subtypes as preeclampsia and eclampsia.
- Without gross oedema or proteinuria, also termed as gestational hypertension.

Theories about the cause of pregnancy-Induced Hypertension: ⁸

Any satisfactory theory must account for the observation that pregnancy induced or aggravated hypertension is very much more likely to develop in the woman who

- Is exposed to chorionic villi for the first time
- Is exposed to superabundance of chorionic villi, as with twins or hydatidiform mole
- Has preexisting, vascular disease or
- Is genetically predisposed to hypertension developing during pregnancy.

TREATMENT MODALITIES:

Rest: Increases the renal blood flow diuresis, increases the uterine flow improves the placental perfusion and reduces

the blood pressure.

Diet: The diet should contain adequate amount of protein (about 100gm). Usual salt intake is not restricted. Fluids need not be restricted. Total calorie approximate 1600cal/day.

Diuretics: massive oedema, not relieved by rest and producing discomfort to the patient, antihypertensive drug therapy.

In Ayurvedic classics *lakshanasof Garbhakshaya, Garbhasosha, Vatabhipanna Garbha* are near to signs and symptoms of IUGR. According to Acharya Sushruta absence of quickening and fundal height less than period of amenorrhoea are the clinical features of *Garbhakshaya*.⁹ Here in this case the fundal height in correspondence with period of gestation. So we correlate somewhat with the *Garbhakshaya. Garbhaksahya* comprising (*AnunnataKukshi*) fundal height less than the period of gestation and (*Garbha Aspadana*) reduced fetal movement due to reduced amniotic fluid can be taken as fetal growth related disorder mainly IUGR (Intra Uterine Growth Restriction). Ayurveda describes a definite classical reference for the efficient management of IUGR. Acharya Sushruta has mentioned the usage of *Ksheera Vasti* (medicated milk enema) from 8th months onwards to complete nourishment of the fetus. Here in this complete management of IUGR with PIH was achieved by Ayurveda Regimen and the case along with patients history, clinical findings, investigations and management has been described.

CASE REPORT:

A Christainwoman aged 29 yrs visited OPD of NIA demmed to be university on (24/04/2021) with the complaint of Amenorrhoea 9 months (G2P1A0L1) associated with itching on upper and lower extremities since 3 month. She also complaints of swelling in her leg, which resembles us towards the pedal edema. She also complaints of severe hyperacidity, chest pain on and off, occasional headache since 10 days in the first visit.

L.M.P.-15/08/2020, E.D.D: 22/05/21 and P.O.G.-35 weeks 6 days

G1: FTND X 5yrs x FCH delivered at our institute NIA

G2: Present Pregnancy

- **Past medical history:** She was suffered from Covid. She has taken medications from allopathic, but the major symptom cough was persistent due to which Supportive treatment from Ayurveda with *Guduchighan Vati* 2 tab BD and Syp. Septillin 4tsf. After that she did her test and found to be Covid—ve.
- **Personal history** of the patient revealed that her Appetite- reduced others sleep, micturition and bowel habit was normal.

Clinical Findings:

General examinations: Built – Normal, Weight – 70 kg, Height-151 cm, Tongue –Coated, Pallor-Absent, Pulse Rate -76/Min, BP-140/90 Mm Of Hg, Pallor- Mild, absent, Pedal oedema: Severe on both legs which was Pitting in nature.

P/A: Uterus 32-34 weeks size,

Lie- Longitudinal with cephalic presentation

Uterus feels soft, No contractions, No tenderness, No pain

FSH: + 132 bpm

Diagnostic Assessment:

On per abdomen examination the fundal height was not corresponding with the period of Gestation.

On USG(19/4/2021) the findings revealed Single live intrauterine pregnancy of 34 weeks 6 days with mild IUGR, mild oligohydramnios. Loop of cord around neck, Normal fetoplacental blood flow pattern. Placenta was Grade III With calcified.

Laboratory investigations:

Blood group	A +ve
Hb (4/5/21)	13.2g/dl
PT & INR (09/05/2021)	12.7 & 0.98
Blood Sugar (8/5/2021)	62mg/dl
Serum Creatinine	37mg/dl
Serum Uric acid	3.5
HBsAg&VDRL	Negative
SGOT	115 U/L
SGPT	173U/L
27/4/2021	
Alkaline phosphatase	335.5 U/L
SGOT/AST	259.0 U/L
SGPT/ALT	281.0 U/L
RFT:	
Serum Urea	25mg/dl
Creatinine –Serum	0.7mg/dl
Uric acid	7.8mg/dl
Urine R/M	WNL Protein: Absent Sugar: Absent

Therapeutic Intervention:

s.no.	Aushadi/Drug	Matra/Quantity	Kalpana/Form	Kala/Dosage	Anupana
1.	<i>Avipatkar Churna</i> <i>Pittantak Churna</i> <i>Kapardika Bhasma</i> <i>Shankha Bhasma</i> <i>Gokshura Churna</i>	2gm 1 gm 500mg 500mg 2gm	<i>Churna</i> <i>Churna</i> <i>Bhasma</i> <i>Bhasma</i> <i>Churna</i>	These are in combination and was given after food	Luke warm water
2.	<i>Phalasarpi</i>	5gm	<i>Ghrita</i>	B.D	Milk
3.	<i>Swarna Vasanta malati rasa</i>	250mg	<i>Vati</i>	B.D.	Luke warm water
4.	<i>Punarnavastak Kwatha</i>	40ml	<i>Kwatha</i>	B.D.	-----

Ksheera Vasti

Procedure	Drug	Form	Dose	Duration	Route
<i>Vasti</i>	<i>Aswagandha</i> <i>Yastimadhu</i> <i>Vidarikanda</i>	<i>Ksheerapaka</i>	450ml	10 days planned but was given only for six days due to COVID.	<i>Guda-marga</i>

Procedure for preparation of Vasti:

- Fine powder of *Aswagandha* + *Vidarikanda* + *Yastimadhu* in equal quantity of 10gm each (total 30gm) in boiled with 15 parts of *ksheera* (450ml) & 15 parts of water (450ml) under *Mandagni* (mildfire), until only milk part remain. Thus obtained *ksheerapaka* is filtered & used for *vasti*.

Procedure for administration of *Vasti*:

- Patient was in empty stomach.
- The patient were asked to lie on *Nubjaavastha* (Knee chest position) on the *Vastitable*.
- No prior *Snehana* (oleation) or *Swedana* (Sudation) were administered considering the pregnancy condition. The *Ksheera Vasti* (500 ml) in luke warm condition was taken in the enema can attached with tube and the end of tube was attached with a rubber catheter no.8 anal orifice and tip of the catheter is inserted into anal canal of the patient steadily and slowly until it reaches inside up to 3-4 inches.
- Therefore the catheter was held slightly upward position above the anal orifice and the administration of *Vasti* was done slowly without shaking the hand, leaving behind a little quantity of *Vasti* drug in the enema can.
- During the administration of *Vasti*, the patient were instructed to take deep breaths. After the administration of *Vasti*, the catheter was removed from anal canal, and lower back and buttocks was patted (*Sphiktadana*) 3-4 times.
- After administration of *Vasti*, patient was asked to turn into supine position and rest on the table till she feels the urge for defecation.

Table shows complete schedule of *Ksheeravasti* along with Return time

Date	FHS\POG	B.P.	Time of application of <i>Ksheera Vasti</i>	Return time
25/04/2021	134bpm\36 wks + 1 day	130\80 mm of Hg	09:55am	10:05am
26/04/2021	136bpm\36 wks + 2 days	120\80 mm of Hg	10:30 am	10:50 am
27/04/2021	132 bpm/ 36wks + 3 days	120\90 mm of Hg	10:15 am	10:35 am
28/04/2021	126 bpm/ 36wks + 4 days	110\70 mm of Hg	09:50 am	10:15 am
29/04/2021	132 bpm/ 36wks + 5 days	130\90 mm of Hg	10:50 am	11:15 am
30/04/2021	124 bpm/ 36 wks + 6 days	130\90 mm of Hg	08:55 am	09:15 am

On the sixth day, after the *Ksheeravasti* returned

after 20 mins, then again the B.P. was taken and it was found to be shoot up to 160\110 mm of Hg. So, for immediate management, patient was told to consult Allopathic doctor and was prescribed with Tab. Labetamac 100mg TDS & for the raised marker of Liver function test Tab. Udiliv 300mg 1 tab B.D. Then her B.P was slightly reduced to 140/110mm of Hg. It was not controlled completely after consumption of medicine for five days. She again visited our OPD and *Punarnavastak Kwatha* was added to the regimen. Then her B.P was 110/70 mm of Hg throughout. These administered drugs *Aswagandha*, *Vidarikanda* and *Yastimadhu* has following properties due to which it acts on the intra uterine growth restriction. *Yastimadhu* contains *Medhya*, *Vatanulomana*, *Jeevaneeya*, *Sandhaneeya*, *Rasayana*, *Balya* it is equally useful in *Garbhakshaya*.¹⁰ *Vidarikanda* is *Balya*, *Rasayana*, *Vatahara*, *Jivaniya*, *Brihmniya* and is also Useful in *Dourbalya* and *Sosha*. *Aswagandha* is *Rasayana* and it also possess anti-inflammatory, antioxidative features.¹¹ An aqueous suspension of *Ashwagandha* root was used at 100 mg/kg/oral dosage. The results indicate a significant increase in the plasma corticosterone level, phagocytic index and avidity index in rats subjected to cold swimming stress. In the rats pretreated with the drug, these parameters were near control values and an increase in the swimming time was observed. These results indicate that *Withaniasomnifera* used in the crude form is a potent anti-stress agent. The results of above studies lend support to the hypothesis of tonics, vitalizers and rejuvenators of Ayurveda which indicate clinical use of *Withaniasomnifera* in the prevention and treatment of many stress induced diseases like arteriosclerosis, premature ageing, arthritis, diabetes, hypertension and malignancy (Singh, 1986, 2005; Singh and Misra, 1993). By this research to some extent *Aswagandha* is aiding for decreasing in blood pressure that can be in any form either oral or through *Vasti*.

Contents of this *Ksheeravasti* predominantly have *Madhurarasa*, *Snigdha*, *Sheeta* and *Guruguna*, *SheetaVeerya*, *Madhura Vipaka*, *Prithvi-Aapmahabhutadhikya*, *Vatashamana* and *Vata-anuloman* and *Garbhavidhikar* properties.¹²

Duration: 14 days

Result: Patient got relief from Severe oedema. The other complaints like severe hyperacidity, Headache were relieved. Then after her B.P. was 110/70 throughout. Fetal movements were good after *Vasti* procedure due to which patient felt well relaxed. Patient got her labor pain and delivered on 8th May with the weight 2.2kg male child at Government Hospital.

Probable mode of action of Significant Drugs which has played important role in combating the condition:

<i>Gokshura</i> ¹³	<i>Gokshura</i> has mutral (diuretic), <i>Rasayana</i> (rejuvenating), <i>balya</i> (strengthening), <i>dipana</i> (appetizer) properties and is recommended in shotha (edema). Sushrutadescribed it for month wise remedies for pregnancy called <i>Masanumasikyoga</i> during sixth and seventh month. <i>Gokshura</i> induces diuresis due to its large potassium content and alkaloids. It helps to relieve the symptoms by <i>vatasamana</i> and nourishing the <i>dhatu</i> s with increased osmo regulation of plasma.
<i>Punarnava</i> - <i>takakwatha</i>	<i>Punarnava kwatha</i> ¹⁴ is recommended by <i>Kashyap Samhitain Garbhini Shotha</i> . Its diuretic property is attributed to large amount of potassium and presence of alkaloid <i>punarnavin</i> . It is <i>Rasayana</i> and <i>Raktavardhak</i> too. These properties helps to increase hemoglobin and to reduce edema. <i>Punarnava</i> is <i>vishaghnha</i> (anti toxic) and <i>kledahara</i> . Its content hypoxanthine-9, L-arabinofuranoside lowers the level of uric acid which results in neutralization and excretion of metabolic substances responsible for toxemia. <i>Punarnava</i> has antiinflammatory action. It contain amino acids like alanine, arginine which are helpful in prevention of complications of pre-eclampsia like Intra Uterine Growth Retardation and oligohydramnios. As per modern view It has also a cardiotonic property, increasing number and strength of cardiac systole. So, it reduces Blood pressure. ¹⁵
<i>Swarna Vasant malati rasa</i> ¹⁶	<i>Swarna Vasant malati Ras</i> is a drug of choice for debility or weakness occurring after fevers or infections. It helps to restore the body strength and natural homeostasis in the human body. <i>Swarna Malini Vasant Ras</i> is an immunity enhancer and antibiotic medicine used for treatment of chronic fevers, general fatigue, weakness after fever or any wayward disease such as tuberculosis or heart diseases. <i>Swarna Malti Vasant</i> has its great curative action in splenomegaly (spleen enlargement), liver enlargement, hepatitis A, B, C and other types as well, malaria fever, productive cough.

DISCUSSION:

Phalagrita, it contains *Satavari*, *Aswagandha*, *Kshiravidari* etc is considered to be rejuvenating tonic mainly for Reproductive System. It acts as a tonic in pregnancy. *Ksheera* (milk) is the main element of *Garbhini Ahara* (maternal diet) having all the qualities to nourish both the mother and fetus. It is considered as the best *Rasayana* (Rejuvenator & Immunomodulator). Drugs which are given in *Vasti* have specific target action & quick absorption. in the *ksheerapka Vasti* form, maximum absorption of the drug would be ensured under the influence of Lactose in the distal small intestine via the paracellular route influenced by ENS & thus accordingly influence the development of retarded fetus.¹⁷ Coming with relief in severe pedal oedema, *Gokshura* here acts as diuretic, thus removing the excess accumulation of fluid in intracellular tissue. Thus reducing the increasing pressure also. *Avipatikarchurna*, *Pittantak*, *Kapardika* & *Shankhabhasma* was given to combat the symptom like chest pain & hyperacidity.

CONCLUSION:

There was no side effects observed on sixth day of *ksheeravasti* as the B.P. was raised. There was seen slight difference in baby weight after the administration of *ksheeravasti* along with oral drugs. So, this is a single case report, further more studies is required to draw appropriate conclusions.

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