Study the efficacy of vidari siddha ghrita in upavishtaka with special reference to intrauterine growth restriction

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Abstract

In modern medicine treatment of Upavishtak [IUGR] is empirically directed towards weight gain of mother & fetus by rest, O2 therapy, Glucocorticoid, nutrition with high protein diet, hydration, pharmacological therapy like Low dose aspirin, Hyperalimentation in the form of transamniotic, intra gastric & intravenous routes. It is very clear from foresaid facts that treatment is cost effective, time consuming & with drastic side effects of drugs and steroids on pregnant mother. At present there is no proven therapy in modern science for reversing growth restriction. That’s why people of present era are of looking forward for successful treatment in Ayurveda classics. It is revealed that Upavishtak is one of the disease which is comparable to IUGR in modern medicine. In Ayurveda various drugs and preparation have been described for treatment is based upon basic principles such as rasa, vipak, guna, veerya of drugs.

While describing treatment of Upvishtak Ayurvedic classics have emphasized on drugs having Jeevniya, Brunhaniya and Vataghna properties. In Upvishtak main dosha is vata dosh. Vidari is vataghna, Balya, Bruhniya and ghrita also Vataghna. It has been selected as the line of treatment. So our ultimate goal is “Healthier
the mother stronger and healthier will be the child” may be achieved. Hence in an attempt to expand the concept of IUGR according to Ayurveda and to yield a flourishing result to this world wide problem through Ayurveda; this topic has been selected for the study and mentally and become social problem as well as lifelong trouble for family. Children with low birth weight (<2.5 Kg) have an increased risk of infection and death during the neonatal period and infancy. That’s why I decided to work upon Upavishtak.

Effective drug is not yet available on IUGR. So it is needed to have an effective solution on this problem. While describing treatment of Upavishtak, ayurvedic classic have emphasized on drugs having Jeevaniya, Bhruhniya and Vataghna properties, drugs having Madhur rasa and Vipak.

Vidarikanda (Pueraria tuberosa) is one of the dravya mentioned in bhrihiniya gana. It is easily available, having madhur ras and vipak, vataaghna property, so decided to study vidari siddha ghrita in the management of Upvishtaka.

Apart from prematurity, IUGR is a major public health problem in most of the developing countries. IUGR is due to genetic, placental or maternal factor. Causes

**Introduction**

The aim of Prasutitantra is to get a healthy progeny i.e. Suprajanana. For the same purpose; in all Ayurvedic texts, Garbhinishaparcharya is described in detail. It is not only concerned with the maternal health but also aims at good fetal outcome. Aim of the Garbhinishaparcharya is described as- Anupaghataya means continuation of pregnancy without any complications in mother and fetus. In Ayurveda, Garbhavyapada such as Garbhasrava, Upavishtaka, Garbhashosha etc are explained which causes upaghata to garbha.

Out of gharbhavyapad described in our text (Gharbhasrav, Gharbhapat, Upavishtak, Lingarba, Nagodar, Mrutgarbha makkal, vishakanbha); I decided to conduct work on cases of IUGR which is termed as Upavishtak.

Upavishtak is one of the major problem of pregnancy which affects the fetus physically

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are multiple & involve one of these most frequently. It is related to condition like poverty, chronic malnutrition & placental insufficiency in mother. Under nutrition is one of the most common but correctable causes of IUGR in developing countries like India. The most common complication of IUGR, include increase risk for perinatal asphyxia, meconium aspiration, electrolyte imbalance from metabolic acidosis, polycythemia and 6-8 fold increase for intrapartum deaths. Long term squeal of IUGR include neurological growth deficit in the form of minimal brain dysfunction, decrease attention span, learning disabilities, speed defect etc.

Apart from these, various epidemiological studies suggest that IUGR is a significant risk factor for the adult life condition like Chronic Hypertension, Ischemic heart disease, Diabetes mellitus and Obstructive lung disease etc.

**Aim and objectives**

**Aim**

Study the efficacy of *Vidari Siddha Ghrita* in *Upavishtaka* with special reference to Intra Uterine Growth Restriction.

**Objectives**

1) To study the efficacy of *Vidari sidha ghrita* in *Upavishtaka*.

2) To study Intra Uterine Growth Restriction.

**Material and methods**

**Study design**

1) Patient was selected by random sampling method.

2) Total no. of 60 patients with *upavishtaka* were selected and divided into 2 groups.

**Group A- trial group**

Patients were treated with *Vidarikanda Siddha Ghrita* along with the standard protein supplement.

 Matra – 10 ml twice a day *Vidarikanda Siddha Ghrita* with 5 gm protein supplements.

*Kal - Sabhukta*.

Duration - Till Delivery.

Follow up –Every 15 days.

**Group B-control group**

Patients were treated with standard protein supplement.

 Matra – 5 gm twice a day.

Duration –Till delivery

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Follow up – Every 15 days.
3) Written and informed consent of patient was taken prior to treatment.
4) Case record form was maintained.

**Criteria for selection of patient**

**Inclusion criteria**
1) Pregnant women having *Upavishtaka garbhavyapad* diagnosed by clinical signs & ultrasonography.
2) Gestational age between 28-34 weeks of any parity.

**Exclusion criteria**
1) Pregnancy with PIH
2) Pregnancy with D.M, Cardiac And Renal Disease, Koch’s
3) Twin pregnancy
4) Congenital malformations of fetus

**Withdrawal criteria**
1) Patient not ready to continue treatment.

**I. Assessment criteria**

**Objective parameters**

<table>
<thead>
<tr>
<th>Examination during follow up</th>
<th>Ponderal Index</th>
<th>Estimated fetal Weight(gms)</th>
<th>Fundal Height (cm)</th>
<th>Abdominal Girth(cm)</th>
<th>Difference in growth lag</th>
<th>Weight of mother</th>
</tr>
</thead>
</table>

1) Ponderal Index=estimated fetal weight/ (FL)31.
2) Growth rate of estimated fetal weight.
3) Difference in growth lag.

**Observations**
1) Weight of baby.
2) Symphysio-fundal height in cms.
3) Abdominal girth in cms.
4) Weight of mother.

Baseline screening: Criteria for baseline screening as follows
1) Lab Investigation
   ➢ Haemogram
   ➢ Urine Routine
   ➢ BSL®
   ➢ HIV
   ➢ HbSAg
   ➢ Blood group
   ➢ USG (Obst)

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Statistical Analysis:
As this study is open random & prospective with a patient quantity of 60.

1) Paired t-test 2) Unpaired t-test 3) Fisher exact test are applied.

Observations & Results
showing effect on parameters of 30 patients of Upavishtaka of Trial group by paired ‘t’ test.

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Parameter</th>
<th>Mean± SD</th>
<th>Mean of Diff ± SD</th>
<th>SE</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>FH</td>
<td>29.133±1.548</td>
<td>33.167±1.234</td>
<td>4.033±1.884</td>
<td>0.3440</td>
<td>11.724</td>
</tr>
<tr>
<td>2</td>
<td>AG</td>
<td>81.267±5.990</td>
<td>84.900±5.426</td>
<td>3.633±1.781</td>
<td>0.3251</td>
<td>11.175</td>
</tr>
<tr>
<td>3</td>
<td>PI</td>
<td>7.038±0.5128</td>
<td>7.467±0.5084</td>
<td>0.429±0.3501</td>
<td>0.0639</td>
<td>6.721</td>
</tr>
<tr>
<td>4</td>
<td>Difference in growth lag</td>
<td>11.967±4.789</td>
<td>8.467±4.904</td>
<td>3.500±3.749</td>
<td>0.6844</td>
<td>5.114</td>
</tr>
<tr>
<td>5</td>
<td>Weight of mother</td>
<td>52.783±7.638</td>
<td>55.383±7.915</td>
<td>2.6±0.578</td>
<td>0.1056</td>
<td>24.623</td>
</tr>
</tbody>
</table>

Effect of therapy on parameters of trial group:
1. symphysis pubis to fundal height - Increase in fundal height by 4.033±1.884 was tested statistically by paired ‘t’ test. ‘t’
   was 1.724 & p < 0.0001 which was highly significant.

2. Abdominal Girth
Increase in Abdominal Girth by 3.633±1.781 was tested statistically by paired ‘t’ test. t
was 11.175 & p < 0.0001 which was highly significant.

3. Ponderal index
Increase in Ponderal index by 0.429± 0.3501 was tested statistically by paired ‘t’ test. ‘t’ was 6.712 & p < 0.0001 which was highly significant.

4. Difference in Growth lag-
Decrease in difference in growth lag by 3.500 ± 3.749 was tested statistically by paired ‘t’ test showing effect on parameters of 30 patients of Upavishtaka of control group by paired ‘t’ test.

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Parameter</th>
<th>Mean± SD</th>
<th>Mean of Diff ± SD</th>
<th>SE</th>
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<th>P</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>FH</td>
<td>29.867± 1.907</td>
<td>32.967± 1.450</td>
<td>3.100± 1.709</td>
<td>0.3120</td>
<td>9.935</td>
</tr>
<tr>
<td>2</td>
<td>AG</td>
<td>79.667± 4.708</td>
<td>82.400± 4.854</td>
<td>2.733± 1.337</td>
<td>0.2442</td>
<td>11.195</td>
</tr>
<tr>
<td>3</td>
<td>PI</td>
<td>6.963± 0.4162</td>
<td>7.189± 0.4523</td>
<td>0.2260± 0.4973</td>
<td>0.09080</td>
<td>2.489</td>
</tr>
<tr>
<td>4</td>
<td>Difference in growth lag</td>
<td>8.967± 2.526</td>
<td>7.467± 3.371</td>
<td>1.500± 3.928</td>
<td>0.7172</td>
<td>2.091</td>
</tr>
<tr>
<td>5</td>
<td>Weight of mother</td>
<td>52.833± 7.576</td>
<td>55.350± 7.925</td>
<td>2.517± 0.6752</td>
<td>0.1234</td>
<td>20.399</td>
</tr>
</tbody>
</table>

Effect of therapy on parameters of control group:

1. symphysis pubis to fundal height - Increase in fundal height by 3.100± 1.709 was tested statistically by paired ‘t’ test. ‘t’ was 9.935 & p < 0.0001 which was highly significant.
2. **Abdominal Girth**

Increase in Abdominal Girth by 2.733±1.337 was tested statistically by paired ‘t’ test. ‘t’ was 11.195 & p < 0.0001 which was highly significant.

3. **Ponderal index**

Increase in Ponderal index by 0.2260 ± 0.4973 was tested statistically by paired ‘t’ test. ‘t’ was 2.489 & p 0.0188 which was highly significant.

4. **Difference in Growth lag**

Decrease in differane in growth lag by 1.500 ± 3.928 was tested statistically by paired ‘t’ test. showing comparison between two groups by Unpaired ‘t’ test.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Parameter</th>
<th>Mean of difference ± SD</th>
<th>SE</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FH</td>
<td>4.033 ± 1.884</td>
<td>0.3440</td>
<td>2.010</td>
<td>0.0491</td>
</tr>
<tr>
<td>2</td>
<td>AG</td>
<td>3.617 ± 1.794</td>
<td>0.3276</td>
<td>2.162</td>
<td>0.0347</td>
</tr>
<tr>
<td>3</td>
<td>PI</td>
<td>0.4290 ± 0.3501</td>
<td>0.0639</td>
<td>2.057</td>
<td>0.0442</td>
</tr>
<tr>
<td>4</td>
<td>Difference of growth lag</td>
<td>-3.500 ± 3.749</td>
<td>0.6844</td>
<td>2.017</td>
<td>0.0483</td>
</tr>
<tr>
<td>5</td>
<td>Growth rate</td>
<td>26.879 ± 4.981</td>
<td>0.9094</td>
<td>2.197</td>
<td>0.0320</td>
</tr>
<tr>
<td>6</td>
<td>Weight of mother</td>
<td>3.083 ± 0.6309</td>
<td>0.1152</td>
<td>3.357</td>
<td>0.0014</td>
</tr>
</tbody>
</table>

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Comparison between two groups was statistically evaluated by Unpaired‘t’ test.
1. symphysis pubis to fundal height - unpaired‘t’ was 2.010 & p= 0.0491 which suggested that difference of mean exhibited by trial group was significant.

2. Abdominal Girth
unpaired‘t’ was 2.162 & p= 0.0347 which suggested that difference of mean exhibited by trial group was significant.

3. Ponderal index:
unpaired‘t’ was 2.057 & p= 0.0442 which suggested that difference of mean exhibited by trial group was significant.

4. Difference in Growth lag:
unpaired‘t’ 2.017 was & p =0.0483 which suggested that difference of mean exhibited by trial group was significant.

5. Growth rate-
unpaired‘t’ 2.197 was & p =0.0320 which suggested that difference of mean exhibited by trial group was significant.

6. Weight of mother-
Un paired‘t’ was 3.357 & p= 0.0014 which suggested that difference of mean exhibited by trial group was significant.

Total effect of therapy

Total effect of therapy has been evaluated in terms of upashaya and anupashaya.

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showing Total effect of therapy on 60 patients of Upavishtaka.

<table>
<thead>
<tr>
<th>Sr. no</th>
<th>Total effect of therapy</th>
<th>Trial Group</th>
<th>Control Group</th>
<th>Total effect of therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of pts</td>
<td>%</td>
<td>No. of pts</td>
</tr>
<tr>
<td>1</td>
<td>Upashaya</td>
<td>28</td>
<td>93.33%</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Anupashaya</td>
<td>2</td>
<td>6.67 %</td>
<td>10</td>
</tr>
</tbody>
</table>

In case of trial group 28 patients (93.33%) were got upashaya and 2 patients (6.67%) were got Anupashaya. In case of control group 20 patients (66.67%) were got upashaya and 10 patients (33.33%) were got Anupashaya.

Effect of Therapy was observed on the clinical parameters and Ultrasonography of Upavishtaka

**Effects of Drug on Clinical Parameters –**

1. symphysis pubis to fundal height -
Mean of difference of fundal height in trial group was 4cm while in control group was 3.1 cm. This indicates that trial group therapy is more effective.

2. Abdominal Girth
Mean of difference of abdominal girth in Trial Group was 3.6 cm and in control Group was 2.7 cm. This indicates that trial Group was more effective.

3. Weight of mother-
Mean of weight of mother in Trial Group was 3.08kg and in control Group was 2.5kg.

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This indicates that trial Group was more effective.

**Effects on Ultrasound based parameters**

1. **Ponderal index**
   Mean of difference of ponderal index in trial group was 0.42 while in control group was 0.20. This is going to indicates that trial group therapy is more effective regarding PI.

2. **Difference in Growth lag**
   Mean of difference of difference in growth lag in trial group was decreased by 3.5 day while in control group was decreased by 1.5 day. This indicates that trial group is more effective.

3. **Growth rate**
   Mean of difference of growth rate in trial group was 26.87gm/day while in control group was 24.32gm/day. This indicates that trial group therapy is more effective.

**Birth weight**
Mean of difference of birth weight of baby in trial group was 2.31kg while in control group was 2.24. This indicates that trial group therapy is more effective.

**Total effect of therapy**
Total effect of therapy has been evaluated in terms of *upashaya* and *anupashaya*.
In case of trial group 28 patients (93.33%) were got *upashaya* and 2 patients (6.67%) were got *Anupashaya*.
In case of control group 20 patients (66.67%) were got *upashaya* and 10 patients (33.33%) were got *Anupashaya*.
Comparison between two groups was statistically evaluated by Fisher's Exact Test. The P value is 0.0211, which was statistically significant which suggested that there is significant difference between two groups with respect to total effect of therapy.

**Probable mode of action of vidari Siddha Ghrita-**

*Upavishtaka* is a disease where *Vata* is the chief *Dosha* involved in pathogenesis. This aggravated *Vata* further vitiate *Pitta* and *Kapha Doshas*; they obstruct the *Rasavaha* channels giving nutrition to the fetus. This blockage in the supply of nutrition, fetus get desiccated and the condition is called as *Upavishtaka*.

The ideal treatment for this ailment should be comprised drugs, which not only give
complimentary nutrition to the fetus but also break the pathogenesis at the level of etiology and pathology. The Ghrita is having Madhura Rasa, Snigdha guna predominance which is strictly opposite for both type of etiological factors, play role in disease pathogenesis.

Vidari has madhur ras, madur vipak, sheeta virya, singdha guna and vatpittahar; has balya and bruhaniya properties. It has mansa and ras gamitva so it acts as mans & ras vardhaka. Ghrita also has madhur ras, madhur vipak, sheeta virya, vatpittahara; acts as snehan, deepan, agnivardhaka which leads to rasvardhan & ultimatimely both acts as garbhaposhana.

Conclusion:

- Ponderal index shows significant increase in Trial group.
- Growth rate shows significant increase in Trial group.
- Difference in growth lag shows significant decrease in Trial group.
- Trial Group drugs were more effective in foetal growth rate, abdominal circumference, weight of mother, fundal height, ponderal index and birth weight. Control Group drugs have also shown better effect.

- Thus from statistical analysis, one can comment that in IUGR, Vidari siddha ghrit along with protein powder has better effect over only protein powder.
- So with all above observations we can conclude that Vidari siddha ghrit is effective in Upavishtak

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*Special Issue for “National Seminar- Practical approach in Prasutitantra And Streerog 2015”*
Cite this article:

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