

AN AYURVEDIC PERSPECTIVE OF INTRAUTERINE GROWTH RETARDATION (IUGR) – A CONCEPTUAL STUDY

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ABSTRACT

Upavistaka (IUGR) is one among the *Garbhavyapadas*. According to the modern science IUGR is common disorder & found in day to day practice. Percentage of IUGR is increasing so proper evaluation & management can result in favourable outcome. According to *Ayurveda* if a pregnant woman does not follow the recommendations from *Ayurveda* she may land up into many pregnancy related complications which are broadly categorized as “*Garbhavyapada*” & “*Garbhaupadrava*”. *Garbhavyapada* are disorders of *Garbhaa*/foetus like, *Garbhastrav* (early pregnancy loss), *Garbhapaata* (2nd trimester abortion), *Garbhashosha*, *Upavishtaka*, *Nagodara*, *Leenagarbha* (various type of IUGR) and *Mritagarbha* (IUD). While going through *Ayurvedic* literature, it becomes evident that *Ayurveda* is a treasure house for natural formulations which are devoid of side-effects & offers holistic medicine in management of *Upavishtaka*. Hence, an attempt was made through this study to review the *Ayurvedic* literature regarding *Upavishtaka* (IUGR) & its management & to enlighten the importance of *Ayurveda* in this era in improving the quality of life.

Keywords: *Upavishtaka*, IUGR, *Garbhavyapada*.

INTRODUCTION

Pregnancy (*Sagarbhavastha*) is an important milestone in life on the road of motherhood. Propagation of species through reproduction is one of the most basic instincts of any living being. However in case of human species, only reproduction in numbers is not considered to be important. According to *Ayurveda*; the ancient life science “healthy progeny” (*Supraja*) is the aim. Basically *Ayurveda* is a preventive science, which recommends various life style & dietary regimens to prevent complications and diseases. In pregnancy sometimes due to *Mithyahaar-vihar*, over exertion, stress & malnutrition, women suffer from various problems. These are Yo-

nigatastrav, *Udarshoola* or growth of foetus get retarded etc. Intra Uterine Growth Retardation [IUGR] is one of the important symptoms observed in day to day practice. Foetal growth restriction is the second leading cause of perinatal morbidity and mortality, followed only by prematurity. The incidence of IUGR is estimated to be approximately 5% in the general obstetric population. In assessing perinatal outcome by weight, infants who weigh less than 2500gms at term have a perinatal mortality rate 5-30 times greater than that of infants whose birth weight are at 50th percentile of normal weight. The mortality rate is 70-100 times higher in infants who weigh less than 1500gms. Perinatal asphyxia involv-

ing multiple organ system is one of the most significant problems in growth restricted infants.

This growth retardation disorders are termed as *Upavishtak* (cessation of foetal growth accordingly) in *Ayurved*. *Upavishtak* associated with nourishment of foetus for which it is totally depends on mother. *Upavishtak* can be correlated with IUGR, in which the foetal weight is below 10% of average for the gestational age¹. Timely diagnosis and management of IUGR is one of the major achievements in contemporary obstetrics. If the growth restricted foetus is identified and appropriate management instituted, perinatal mortality can be reduced, underscoring the need for assessment of foetal growth at each perinatal visit. There are certain drugs and many formulations for IUGR which are supposed to be effective. These can provide a safe, reliable and economical, alternative to available mode of management.

ETIOLOGY: In *Ayurveda* causes of *Upavishtak* are *Ushna* and *Tikshnaaahar*,

Atishram (over exertion), *Divaswap*, *Pushpadarshan*, *Yonigataraktrav*, *Yonigatastrav*, *Garbhoghathkarbhavas*^{2 3 4}.

CONCEPT OF DISEASE: After some development and attainment of Saar (after four month) by the foetus if bleeding per vaginum or other types of vaginal discharges occur due to use of pungent and hot articles by the pregnant woman, then the foetus does not grow properly due to these discharges, and stays in the uterus for a very long time. This condition is termed as *Upavishtak*⁵.

Vata aggravated due to this bleeding withholding *Pitta* and *Shleshma* compresses the *Rasavahanadi* of the foetus. Because of this obstruction to *Rasavahanadi* causing improper flow of *rasa*, the foetus does not develop properly and becomes *Upavishtak*, in the same way as the paddy does not grow properly if the water does not reach the field due to obstruction with leaves and grass etc. to its flow in the supply channels.

Table: Type of IUGR in Ayurvedic Text: UPAVISHTAK

Author	Etiology	Clinical Features	Period of Delivery	Principles of treatment
Charaka	Use of hot, pungent articles, bleeding or other vaginal discharges during <i>Sanjatasaragarbha</i>	Absence of fetal growth, prolonged intra-uterine stay.	After considerable delay.	<i>Jivaniya</i> , <i>Brihaniyad</i> drugs, eggs, riding, etc.
Susruta	-	-	-	-
Vagbhata I	Due to use of contra-indicated articles in <i>Sanjatasara-garbha</i> , continuous but less bleeding per vagina causing aggravation of <i>Vata</i> and obstruction to <i>Rasavahanadi</i> .	Absence of abdominal growth, quickening of fetus without decrease in its size, clinical features of other dosas.	After Years	Just like <i>Charakalateron</i> induction of abortion.

Vagbhata II	Bleeding in developed fetus.	Just like vagbhata I	-	Just like Charaka
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INTRA UTERINE GROWTH RETARDATION (IUGR)

DEFINITION: The most widely used definition of IUGR is a fetus whose estimated weight is below the 10th percentile for its gestational age and whose abdominal circumference are below the 2.5th percentile. At term, the cutoff birth weight for IUGR is 2,500 g (5 lb., 8 oz.).

TYPES: Depending upon the relative size of their head, abdomen and femur the foetuses are subdivided into:

- a) Symmetrical or Type 1
- b) Asymmetrical or Type 2

ETIOLOGY:-

The causes of foetal growth restriction can be divided into 4 groups.....

- 1) Maternal
- 2) Foetal
- 3) Placental
- 4) Unknown

PATHOPHYSIOLOGY: Basic pathology in small for gestational age is due to reduced availability of nutrients in the mother or its reduced transfer by the placenta to the foetus. It may also be due to reduced utilisation by the foetus. Brain cell sizes (asymmetric-SGA) as well as cell numbers (symmetric-SGA) are reduced. There is oligohydramnios as the renal and pulmonary contribution to amniotic fluid are diminished due to reduction in blood flow to these organs. The SGA is at risk of intrauterine hypoxia and acidosis, which if severe may lead to intrauterine foetal death.

INVESTIGATIONS:

1. Serial ultrasonography is the most valuable tool in the detection of growth retardation. A scan has been performed in early pregnancy, this is of great benefit. USG is repeated by two weeks of interval.

2. Uterine artery Doppler
3. Umbilical artery Doppler
4. Middle cerebral artery Doppler^{6 78}

GENERAL MANAGEMENT:-

1. Adequate bed rest specially in left lateral position.
 2. To correct malnutrition by balanced diet 300 extra calories per day are to be taken.
 3. High protein diet⁹.
 4. Essential nutrients supplementation prevents adult metabolic disease in a trans generational model of IUGR. (e.g. Accretion of amino acid into proteins is an essential component of foetal growth)¹⁰.
 5. WHO recommended diet¹¹
 6. Low dose aspirin (50mg daily) may be helpful in very selected cases with history of recurrence.
 7. Avoidance of smoking and alcohol.
- Ayurveda describes the treatment of *Upavishtaka*(IUGR) is ...

MANAGEMENT

For the treatment of IUGR *Jeevaniya*, *Madhura*, and *Vataharadravyas* are used with *Ghrita*, *Dugdha* and *Aamgarbha* should be given¹². In same manner, *Acharya Charak*¹² also said that, In *Saman-yachikitsa* of IUGR different *Acharya* explain different types of *Chikitsa* for *Vrid-dhi* and *Poshan* of *Garbha*. IUGR arises due to *Garbhaposhan janyavikruti*. *Garbha* does not get proper *Ahar-rasa* that contains all types of *Saptadhatu vardhakahara*. Improvement in *Ahara-vihara* of *Garbhini* will improve *Ahara-rasa Utpatti* and nutrition of *Garbha*. For production of *Prakritahara rasa*, the *Agni* of *Garbhini* should be *Prakrit*. According to *Granthakaras*, use of *Jeevaniya*, *Brinhaniya*, *Madhura*,

Snigdha, Vataharadravyas with Ghrita, Ddugdha and Aamagarbha will help her to come out of this condition.

PROBABLE ACTION OF DRUGS

Examples

1. *Ashwagandha*¹³ :- It possess the Gunas as *Vatakaphaghna, Bruhaniya, Rasayan, Deepaniya, Vrushya* and *Garbhasthapana* hence it will act as a good nutritive value, helpful to increase muscle tone of uterus also acts on microcirculation. Considering according to chemical composition¹⁴
 - Steroids helps in cellular hypertrophy (growth)
 - Antioxidant property neutralizes free radicals there by limiting the oxidative damage.
 - Antispasmodic and relaxant effect improves placental circulation which is one of the main reason for IUGR.
2. *Yashtimadhu*¹³:- It possess antioxidant properties and also act as a *Rasayan, Balya, Garbhaposhak, Jeevaniya*. It also helps in improving debility (*Rasadidhatusaarta*)
3. *Laghmalinivasanta*¹⁵:- It is one of the *Vasantkalpa* which is *Madhur, Balya, Garbhaposhak and Garbhvrudhikar*. The drug *Laghmalinivasant* contains *ShudhaKharpar, Marich* with butter. *Kharpar*, which acts on mainly *Rasavahini, Rasadhatvagni, RasutpadanVikruti*. It also works on *Agnimandya*, hence it is very effective in treatment of *Upavishtak* which is caused by severe *Dhatukshaya*.
4. *Gambhari*¹⁵:- It is *Tridoshashamak, Balya, Bruhaniya, Rasayan. Deepaniya* and *Pachaniya* - so helps in IUGR caused by *Dhatvagnimandya*. Its *Tiktara* helps to remove obstruction and thus the fetus can get it maximum

Poshan and complication of LBW can be prevented.

5. *Shatavari*¹³: It is *Rasayan, Balya, Pushtida, SnigdhaGunatmak*. It possesses antioxidant properties. It also works on *Agnimandya*, hence it is very effective in treatment of *Upavishtaka* which is caused by severe *Dhatukshaya*.

CONCLUSION

Upavishtaka(IUGR) is a common disorder in obstetrics and carries increasing risk of perinatal mortality and morbidity. Identification of IUGR is crucial. Timely diagnosis and management of IUGR is one of the measure achievements in contemporary obstetrics. If the growth restricted foetus is identified and appropriate management instituted, perinatal mortality can be reduced. Proper evaluation and management (by modern and *ayurvedic*) can result in favorable outcome.

Ayurveda offers excellent remedies which are safe, naturally available, rejuvenating and finally improves whole health, hence *Ayurvedic* management should be encouraged, so that the alternative safe mode is available for the treatment of IUGR.

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