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AYURVEDA AND MODERN VIEW ON INTRA UTERINE GROWTH RETARDATION (IUGR): A REVIEW ARTICLE

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ABSTRACT :-

Intrauterine Growth Retardation (IUGR) is a significant obstetric complication characterized by suboptimal fetal growth, leading to increased perinatal morbidity and mortality. From a modern perspective, IUGR is associated with multiple etiological factors such as placental insufficiency, maternal malnutrition, infections, and genetic anomalies. Diagnostic modalities like Doppler ultrasound and fetal biometry play a crucial role in early detection and management.

Ayurveda, the ancient Indian system of medicine, provides a holistic view of fetal development, emphasizing the importance of maternal health, nutrition (*Ahara*), lifestyle (*Vihara*), and mental well-being (*Manas*) during pregnancy. Concepts like *Garbha Vriddhi*, *Garbha Poshan*, and *Garbhini Paricharya* offer insights into the causes and prevention of intrauterine growth disorders. Ayurveda also mentioned certain diseases related to fetus i.e. *Upvistaka*, *Garbhsosa*, *Nagodara* and Leena *Garbha*. *Ayurvedic* formulations such as *Phala Ghrita*, *Ashwagandha*, *Shatavari*, and practices like *Abhyanga* and *Ahara* Vidhi are traditionally used to promote healthy fetal growth.

KEYWORDS :- Intrauterine Growth Retardation, *Upvistaka*, *Nagodara*, *Leenagarbha*.

INTRODUCTION :-

Intrauterine Growth Retardation (IUGR) is a major clinical concern in obstetrics, defined as a condition where the fetus fails to attain its genetically predetermined growth potential in the womb. It affects approximately 5–10% of pregnancies globally and is associated with increased risks of stillbirth, neonatal complications, and long-term developmental issues. In modern medicine, IUGR is typically diagnosed using fetal biometry and Doppler studies, with causes including maternal malnutrition, hypertension, placental insufficiency, infections, and congenital anomalies.

From the *Ayurvedic* perspective, fetal growth is governed by the harmonious functioning of *Garbha Dhatvagni* (fetal metabolism), *Garbha Poshan* (fetal nutrition through maternal channels), and *Prakruti* (constitutional makeup). Ancient texts like *Charaka Samhita*, *Sushruta Samhita*, and *Kashyapa Samhita* describe intrauterine development in detail and emphasize the importance of *Garbhini Paricharya* (antenatal care), *Ahara-Vihara* (diet and lifestyle), and *Rasayana* therapy in promoting healthy pregnancy outcomes.

Ayurveda mentioned significance of *Kshirbasti* in such types of conditions, *Shatavari kshirbasti*, *Yashtimadhu siddha kshirbasti*, *Ashwagandha phalaghruta kshirbasti* and *Bruhaniya gana sidha kshirbasti*, etc. can be employed successfully for the management of *Garbhavyapada*.[(1-4)]

THE RELATED TERMINOLOGIES OF IUGR : *Garbhashosha*, *Upavishtak* and *Nagodar* described in *Ayurveda* in Classical texts in the form of *Shlokas* which are as follows:

Garbhashosha :-

वाताभिपन्न एव शुष्यति गर्भः । स मातुः कुक्षिं न पूरयति मन्दं स्यन्दते |

Upvishtak :-

यस्याः पुनरुष्णतीक्ष्णोपयोगाद्गर्भिण्या महति संजातसारे गर्भे पुष्पदर्शनं स्यादन्यो वा योनिस्रावस्तस्या गर्भो

*वृद्धि न प्राप्नोति निःस्नुत्वात्; स कालमवतिष्ठतेऽतिमात्रं, तमुपविष्टकमित्याचक्षते केचित्। **(ch.sha8/25)***

Nagodar :-

*उपवासवतकर्मपरायाः पुनः कदाहारायाः स्नेहद्वेषिण्या वातप्रकोपणोक्तान्यासेवमानाया गर्थो वृद्धि न प्राप्नोति परिशुष्कत्वात्: स चापि कालमवतिष्ठतेऽतिमात्रम्, अस्पन्दनश्च भवति, तंतु नागोदरमित्याचक्षते| **(Ch.Sha8/26)***

The major symptoms of IUGR are improper Development of size of mother abdomen during Pregnancy, small size of fetus, Manda *spandana* and absence of '*Oja'* in *Garbha*, etc. The risk factors which Can trigger IUGR are low maternal weight, iron deficiency, lungs or cardiac diseases associated with Mother, vascular disease, diabetes mellitus and genetic factors.

Estimation of inadequate weight gain, serial fundal height estimation, ponderal index, biophysical profile and ultrasound, etc. are approaches which help to diagnose abnormalities of fetus development.[3-7]

Antenatal Complications :-

- Low birth Weight
- Oligohydramnios
- Reduced Fetal Movements

Intrapartum Complications:-

- Increased rate of IUD
- Operative delivery/cesarean

Post Natal Complications :-

- Learning disabilities
- Speech defects
- Under developed child

THE MAJOR CAUSATIVE FACTOR OF : *Upavistaka garbhavyapada* are as follows :-

- *Mithyaahar-vihar* during pregnancy (*Ushna* and *tikshna Ahara*)
- Over exertion (*Atishram*)
- Stress
- Malnutrition
- Effects of other diseases during pregnancy like; *Anemia*, digestive ailments and hormonal disturbances, etc.

- *Divaswap* (day sleep)
- *Pushpadarshan* (bleeding)
- *Yonigatastrav* & *Udarshoola* also affects growth of fetus.

PATHOGENESIS:-

Pathologically the disease arises during early stage of Pregnancy and one of the major triggering factors is bleeding or vaginal discharge for long time which Aggravates *Vata* and bleeding with itself causes *Pitta* and *shleshma* vitiation which ultimately obstruct *rasavahanadi* of fetus leading to the improper flow of Rasa to the fetus and deprived nourishment causes underdeveloped fetus. The nutritional deficiency leads *rasakshaya* which along with vitiated *Vata* causes *dhatukshaya* and *Garbhavyapada*. The others Pathological components involved in disease are depicted in Figure 1

Dosha	*Vata pradhan tridosha*
Dushya	*Ras* and *rakta*
Srotas	*Rasavaha* & *Raktavaha*
Adhisthan	*Garbhashaya*
Rogamarga	*Abhyantar*

Figure 1: *Samprapti ghatak* of *Garbhavyapada*.

The pregnancy associated with IUGR likely to have following health or child birth related problems:

- Risk of being stillborn
- Difficulty to handle vaginal delivery
- Low blood sugar level during birth
- Fluctuation in body temperature of new born.
- Lack of immunity so child may get suffer with disease just after birth,
- Developmental issues and learning debility.

***AYURVEDA* MANAGEMENT:-**

Ayurveda described treatment of IUGR like *Brinhaniya* Chikitsa for *Garbhavriddhi* and *Tikshna Chikitsa* for *garbhapatana*. Thus *Garbhashosha* can be referred to as IUGR; the major approaches of *Garbhashosha* are as follows:

- *Bhrihaniya* (anabolic) drugs; milk & *Mansa Rasa*
- Avoidance of *Ruksha Padarthas*
- *Yashitimadhu Siddha Dugdha*

The others lines of treatments for IUGR are as follows:

- Bed rest suggested in complicated condition
- Avoidance of heavy weight lifting and physical exertion
- Stress should be avoided, *ayurveda* suggested stress reliving medications.
- Maternal dietary supplementation; *Shali*, *Dugdha* and *Aamgarbha* support *Poshan* of *Garbha Saptadhatuvardhak ahara* improves *Ahara-rasa* thus provides nutrition to *Garbha*.
- Drugs possessing *Jeevaniya*, *Vataharadravyas* and *madhura* effects can be used for the proper development of fetus.
- *Ghritas*; *Vacha ghrita* and Maha *paishachika ghrita* advised
- Ayurveda herbs/plant as drugs; *Ashwagandha*, *gambhari*, *Yastimadhu*, *Shatavari* and *Guduchi*, etc. can be used to acquire health benefits during pregnancy.
- *Anuvasan* Basti by *Ghrita* with *Darvyadi* groups medicines.

ROLE OF *KSHEER BASTI* IN IUGR

Ksheer Basti, a type of *Sneha Basti* prepared using medicated milk, is a significant *Ayurvedic* intervention for conditions involving *Vata* vitiation, including intrauterine growth restriction (IUGR). In *Ayurveda*, IUGR is understood as a condition of *Garbha Kuposhana*, often resulting from disturbed *Apana Vata* and inadequate nourishment of the *Garbha* (fetus). *Ksheer* Basti helps pacify *Vata*, strengthen the *Garbhashaya* (uterus), and improve the nourishment of Rasa and *Rakta Dhatus*, which are essential for fetal development. The basti is usually formulated with cow's milk, ghee or oil, and herbs like *Shatavari*, *Yashtimadhu*, and *Bala*, which possess *Garbhasthapana* and *Brimhaniya* (nourishing) properties. Administered under proper supervision during the second or early third trimester, *Ksheer Basti* may enhance uterine circulation and fetal nourishment through its systemic and local effects, supporting healthy fetal growth. Thus, *Ksheer Basti* serves as a valuable *Ayurvedic* modality in the supportive management of IUGR, aligning with the classical principles of *dosha balance* and tissue nourishment.[7,8]

ROLE OF *AYURVEDA* DRUGS IN IUGR

Ayurveda drugs like *Ashwagandha* possess *vatakaphaghna*, *Rasayan*, *deepaniya*, *Brihaniya* and *garbhasthapana* properties hence imparts nutritive value, and increase muscle tone of uterus and improves microcirculation. Relax placental circulation by virtue of their antispasmodic action thus prevent consequences of IUGR.

Shatavari has *Balya*, *Pushti* and *Rasayan* effects, it also possesses antioxidant effects thus prevent oxidative damage of tissue and treat *Agnimandya* hence improves nourishment of mother as well as fetus. *Shatavari* recommended for *Upavishtaka* caused by *Dhatukshaya* and *Shatavari* support cellular hypertrophy (growth function) due to the presence of steroidal saponins.

Yashtimadhu offers *Balya*, *garbhaposhak*, *Rasayan* and *jeevaniya* action thus cure debility. The taste of *yashtimadhu* improves appetite and imparts feeling of well being thus resist mental irritation which seen commonly in pregnant women.

Gambhari is *Tridoshashamak*, *Bruhaniya*, *Rasayan, balya and deepaniya* drug; it helps to in condition of IUGR associated with *Dhatvagnimandya*. The *Tikta* rasa removes obstruction of fetus nourishment thus *Poshana* of fetus take places.

Ayurveda formulation; *Laghumalinivasanta* Rasa can also be used for IUGR due to its *Balya, Garbhvridhika* and *Garbhaposhak* effects. The ingredients of formulation acts on *Rasadhatvagni* and *Rasavahini* hence affects *Rasutpadan Vikriti. Laghumalinivasanta rasa* prevents *Agnimandya* therefore considered effective in case of *Upavishtak* associated with *dhatukshay*. [9-11]

CONCLUSION:-

The *Ayurveda* gives importance to health of pregnant mother as well as fetus residing in her uterus. The healthy pregnancy and delivery of normal neonate depends upon many factors and Infant's birth weight or development of fetus is one such factor. The improper development of fetus sometimes leads neonatal morbidity and mortality. Intra-uterine growth restriction (IUGR) is such cause of improper development or low weight of fetus. IUGR causes many complications in fetus. Ayurveda described various disorders of fetus under heading of *Garbhavyapada* including *Nagodara, Garbhakshaya, Upavishtaka* and *Garbhashosha*, etc. *Ayurveda* mentioned *Brihaniya* for *Garbhavriddhi* and *Tikshna chikitsa* for *Garbhapatana* as therapies for *Upavishtaka* (IUGR).

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