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Review Article

MANAGEMENT OF INTRAUTERINE GROWTH RETARDATION (IUGR) THROUGH AYURVEDA

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ABSTRACT

Food is the basic necessity for the human beings to survive and to carry out their daily activities. Diet varies from person to person, men and women and even based on the different age groups. Particularly in women, there is special dietary requirements during each stage of her life including childhood, adolescence, pregnancy, breast feeding and menopause. Specially during the pregnancy and breast-feeding nutrition of both and the foetus are very important as it is vital for both the mother and foetus to be healthy. Ayurveda lays great emphasis on ensuring holistic nutrition and even has a vast literature on the *Pathya Apathya* that needs to be followed according to the monthly regimen. It also elucidates in detail about the *Garbhinicharya, Prasava* and *Sutikacharya* etc regimen with more emphasis on the women health. Any deviation from the diet prescribed leads to various *Garbhopadravas* such as *Garbhashosha*, *Upavisthaka*, *Nagodara* etc. Intrauterine Growth Restriction (IUGR) is a main health condition affecting pregnant women and its outcomes are perinatal mortality and morbidity. This IUGR can be correlated to *Garbhashosha* in Ayurveda. The present study makes an attempt to review the researches that has been carried out on the condition *Garbhashosha* and to observe the effects of the same.

INTRODUCTION

A combination of *Ahara* (diet), *Vihara* (activities), *Vichara* (conduct/principles) and *Aushadha* (medicines) have been given great significance in Ayurveda in prenatal care called as *Garbhini Paricharya*. Diet comprises the most important element of *Garbhini Paricharya.* Being pregnant and eventually being suitable to give birth to a life is a fulfilling experience for a woman. But complications associated with it may make it delicate experience for both mama and the child. IUGR is one of similar complication and they're responsible for 8- 9 of foetal death in India. Overall, they complicate 5- 10 of gravidity in India. IUGR is considered as one among the complications which needs to be ruled out as soon as possible and should be treated veritably incontinently and gently.

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On looking into the Ayurvedic classics we find clear description of symptoms related to severe IUGR *(Garbha Sosha).* Acharyas had described these factors under the title of *Garbhopadravas*. In classics, during gestation *Masanumasika Garbhini Paricharya* are described in detail which is veritably effective in precluding the development of IUGR. Intrauterine Growth Restriction (IUGR) is a main health condition affecting pregnant women and its issues are perinatal mortality and morbidity. This IUGR can be identified to *Garbhashosha* in Ayurveda. The present study makes an attempt to review the research studies that has been carried out on the condition *Garbhashosha* and to observe the goods of the same.

IUGR

Perinatal morbidity and mortality are significantly increased in the presence of birth weight lower than 10th percentile. After punctuality, IUGR is the alternate leading cause of perinatal mortality. IUGR foetuses have roughly a fivefold to tenfold increased threat of dying in utero, with over to 23 to 65 of bearings.[1,2] Intrauterine growth restriction (IUGR) is a common and complex obstetric problem. IUGR is noted to affect roughly 10- 15 of pregnant women.[3] IUGR

babies are noted to have increased threat of adverse short-term and long-term issues compared with SGA children.[4] IUGR increases the threat for intrapartum asphyxia, preterm delivery, and pitfalls associated with preterm delivery, including but not limited to respiratory torture pattern, intraventricular haemorrhage, and necrotizing enterocolitis.[5] These babies also are set up to have an increase prevalence of low Apgar scores, umbilical cord pH lower than 7.0, need for intubation, seizures, sepsis, and neonatal death.[6]

Other neonatal morbidities include polycythaemia, hyperbilirubinemia, hypoglycaemia and hypothermia. Several motherly demographic factors have been associated with IUGR. Women at axes of reproductive age, especially youthful motherly age, are at increased threat for IUGR. Several environmental and behavioural threat factors are known to beget IUGR. Women abiding in high altitude areas are exposed to habitual hypoxia, which results in low birth weight. Smoking in gestation is associated is 3.5-fold increased threat of SGA compared with nonsmokers. [7-9] Up to 19 of term low birth weight (LBW) has been attributed to smoking during gestation. Exposure to colourful specifics, similar as warfarin, anticonvulsants, antineoplastic agents, and folic acid antagonists (similar as trimethoprim-sulfamethoxazole, phenobarbital), can affect in IUGR. [10]

Fetal factors can vary from inheritable causes, natural deformations, foetal infection, or other causes, including multiple gravidities. natural deformations, including natural heart complaint, diaphragmatic hernia, abdominal wall blights (omphalocele, gastroschisis), renal agenesis or dysplasia, anencephaly, and single umbilical roadway, are associated with IUGR.[11,12] Placental insufficiency accounts for numerous cases of IUGR and can affect up to 3 or further of all gravidity. IUGR (also called then prenatal SGA) is diagnosed grounded on establishment of accurate early courting, assessment of threat factors, followed by ultrasound for foetal growth. There are colourful webbing ways that would further warrant the growth ultrasound for the opinion of IUGR. Common webbing styles include serum analytes screening, uterine roadway Doppler, and SFH. Once the aetiology of IUGR has been established, and the well-being of the foetus confirmed, colorful investigators have estimated implicit treatment modalities in the stopgap of either extending gravid age at delivery or adding eventual birth weight. Unfortunately, none have been veritably successful, and the substantiation has been assessed in several Cochrane reviews. These implicit treatments include motherly oxygen administration, fresh nutrient supplements, hospitalization for bedrest, calcium channel blockers, hormones, betamimetics, tube volume expansion, low-cure ASA and heparin. Early opinion and treatment of co-existent preeclampsia, including education about the symptoms of severe preeclampsia, may contribute to reduced motherly mortality and long- term morbidity from severe undressed or blustering complaint. Hypertension is the most common motherly comorbidity in IUGR and constantly overrides fetal status in determining the timing of delivery.

Several trials have estimated the effectiveness of precautionary dosing rules of heparin to ameliorate perinatal issues, including precluding IUGR, in women with and without an identifiable thrombophilia complaint. The significance of making a decision to transfer and/or admit a woman to sanatorium because of IUGR (especially with co-existent preeclampsia), and latterly to be visionary with timing of delivery, must not be undervalued. Outpatient care solves geographic burdens of frequent sanitorium visits, especially to indigenous centres, and provides hypertension monitoring, diurnal non-stress testing, access to paediatric discussion, and immediate access to the applicable position of anticipated neonatal paediatric care (most frequently in tertiary perinatal centres). Because of a degree of pre-existing metabolic acidosis in IUGR fetuses, caution should be exercised when giving prenatal corticosteroids for lung development in an inpatient setting in the environment of absent or retrograde end diastolic low haste in the umbilical highways before 32 weeks of gravidity. [13]

Garbhashosha

In Ayurvedic literature, various disorders of fetus are found such as *Garbhavyapadas* that include *Garbhakshaya, Garbhashosha, Upavishtaka, Nagodara*, etc with their treatment. Management in Ayurveda comprises basically like *Brihaniya* for *Garbhavriddhi* and *Teekshna chikitsa* for *Garbhapatana*. Although, the concept of fetal well-being has gained highlight in conventional medicine currently, but the concept of "*Suprajajanana'* is prime objective of the fetus and the maternal health according to Ayurveda since its evolution. Hence care of *Garbhini* or the pregnant women is ascribed towards the well-being of fetus. According to Charakacharya, the fetus gets affected with *Shosha* or the under nutrition due to the non-availability of proper nourishment from the mother, but accomplishes the proper growth after years. [14] Whereas Acharya Sushruta in addition has mentioned *Manda spandana* or reduction of fetal movements as the prime symptom of *Garbhashosha*. [15,16]

Growth retardation of the fetus in the womb has been explained in Ayurvedic classics as '*Garbha Shosha'*. Acharya Charaka describes its causative

factors as '*Aaharamaapnothi yathaa na garbhaha*' which states that this condition is caused when the foetus is not supplied with a proper nutritious diet by the mother. Based on the illustrations of our classics, *Garbha shosha* can be defined as a condition that occurs due to the inadequate nutrient supply to the and hence this leads *Garbha* to *Shosha*. The condition is also addressed as '*Vatabhipanna garbha*' which elucidates that due to the affliction of *Vayu*, the *Garbha* attains *Shosha*.

According to Acharya Charaka, [17] the pregnant woman desirous of producing a healthy baby should resort to healthy and nutritious *Aahara* and *Vihara* rather than involving in improper food and activities and protect herself by following good conducts and mode of life. Acharya Sushruta,[18] very beautifully has described and advised that the woman from the very first day of pregnancy should remain in a positive vibration, religious, present with ornaments, should wear clean and white clothes and perform religious rites, worship god and do auspicious deeds. Sleeping and seating arrangements should be covered with white, soft cushions or mattress and should be comfortable. She should consume sweet, palatable, liquid, unctuous substances that acts as appetizers and should be followed till the delivery. *Ashtanga Sangrahakaara*, [19] has quoted that since the *Aahara* and *Vihara* of mother and foetus are similar, hence the pregnant woman is advised consumption of healthy diet and lifestyle by avoiding the factors that harm the foetus. She can be advocated *Bringhana* therapy too. *Ashtanga Hrudayakaara*, [20] has prescribed both the external and internal use of *Jeevaniya* group of drugs. Acharya Kashyapa,[21] quotes that diet should be taking to consideration the digestive fire, *Desha*, season etc.

Rasavaha Srotas are said as the transporters of nutrition in the body as per Ayurvedic science. Due to the vitiation of *Vata dosha*, the *Rasavaha nadis* of the *Rasavaha srotas* carries nutrition from mother to the child during pregnancy. Any imbalance in the process of nutrition is referred to as *Shosha*. Thus, the *Shosha* occurring during the pregnancy is known as *Garbhashosha* and by this *Garbha* is affected adversely. *Garbha shosha* presents with the restricted growth of the fetus, due to which the size of *Kukshi* does not increase and it is evident by the size of the uterus which is disproportionate to the gestational age of the fetus. The foetal heart rate or the *Spandana* can be understood as reduced fetal movements and it will be mild. Due to the involvement of *Vata dosha*, *Kshaya* will be evident. In Ayurveda, *Garbha shosha* holds a special place and hence various treatments are being described for *Garbha shosha*. As *Nidana Parivarjana* is the first line of treatment, the concept of *Masanumasika pathya* will be very beneficial in promoting the Bala of both *Garbhini* and the *Garbha* and also in prevention of the restricted growth of the *Garbha*. [22] Management according to *Acharyas* include *Brihaniya Jeevaniya, Madhur Aushadhi siddha ghritasevana, Amagarbha sevana, Ksheerabasti, Vatahara chikitsa, Ksheera Mamsarasa*. Acharyas have also mentioned the use of *Teekshnavirechaniya dravya* or *Aparapataniya dravya* for *Patana* and *Yanavahana*, *Dhanyakuttana, Kshobhana, Marjana*, etc. [23] Acharya Charaka explains that when the pregnant women consume the *Aahara*, the *Ahara Rasa* gets digested and formed which performs three functions as [24] nourishment of the mother, formation of milk and nourishment of the foetus. He also quotes that the *Garbha* is an amalgamation of various factors such as maternal factors, paternal factors, *Satmya, Satva* and *Atma* etc. [25] *Garbhopaghatakara Bhavas* have also been explained by Acharya Charaka as the one which is caused due to the unwholesome food and the improper nutrition. In *Jatisutriya Adhyaya*, Charaka has described the factors that are responsible for harming the foetus. [26]

DISCUSSION

Several studies have been conducted on *Garbhashosha* or the IUGR with the objective of providing a definite solution to the problem thereby protecting both the maternal and fetal health. The present study has made an effort to review the studies that have been carried out on *Garbhashosha* and presented here.

In the study of Pandey Reetu et al, *Garbhashoshharyoga* was given to 15 patients with IUGR in a dose of 5gm twice daily with milk orally which was an open randomized uncontrolled clinical trial carried out at OPD of PTSR dept. of R.G.G.P.G. Ay. College Paprola (H.P.). This study showed that *Garbhashoshharyoga* had a good effect on fetal growth restriction and nourishment of pregnant women without any side effects to foetus and mother. [27] In another study, Madhumalini Vasant rasa showed effective results by acting as *Bala Pushtikara, Vata hara* and *Garbha vruddhikara* and it helped in increasing in the weight of fetus and mother and height of uterus significantly. [28]

Rituraj et al studied about the *Gokshura* and its effect in *Garbhashosha* and showed that the *Gokshura* has *Mutraghna, Balya, Shoolaghna, Vatahara* and *Hridhya* properties and *Kledahara* properties. Emphasis of *Gokshura* in *Garbhini* is well known with properties such as *Jeevaniya, Rasayana, Medhya, Balya*, and *Brahmana*. This drug has good impact on growing fetus. It is found to increase foetal weight by *Bruhmana, Balya, Pushtidayaka, Rasayana* etc. properties by rejuvenating the Dhatus. It acting as

Dhatuvardhaka increases *Rasa Dhatu* and increases the amniotic fluid. *Gokshura* will helps to increase the urine output which will reduces the oedema and it will lower the KLEDA. It acts as *Kledahara* which will supply proper blood supply to the foetus which will manage the foetal growth and the *Rasayana* and Brahmana property of *Gokshura* which will nourishes the foetus.[29]

CONCLUSION

Intrauterine Growth Restriction (IUGR) is a main health condition affecting pregnant women and its outcomes are perinatal mortality and morbidity. This IUGR can be correlated to *Garbhashosha* in Ayurveda. The present study makes an attempt to review the researches that has been carried out on the condition *Garbhashosha* and to observe the effects of different *Yogas* administered in the management of *Garbhashosha*.

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