Discussion
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Upvishtak is one of the major problems of pregnancy which affects the foetus physically and mentally. The effect of that can also leads to disturbances in mother’s mental and physical health. Any competent drug is yet not available on IUGR. So it is need to have an effective solution on this problem. For this reason this research work was undertaken.

Upvishtak is mentioned in Charak, Sushruta, Vagbhata, Ashtang sangraha, Sharangdhar, Bhelsamhita and Bhaishajyaratnavali. Upvishtak occurs in Mahati-Sanjatsar garbha i.e. in late second or third trimester. For the proper fetal growth diet and agni of mother, rasadhatu, rasavikshepan, upsnehan in placenta, and rasavahan in garbhanabhinadi must be in good condition. Besides these mothers good mental and physical health is also important. So the importance must be given to prenatal counseling and physical checking of mother. If any physical problem or mental stress found should be treated in prepregnant state.

After considering the factors responsible for fetal growth samprapti of Upvishtak can be stated as follows -
SAMPRAPTI -

Guru, Abhishyandi & Viruddha Ahar, Diwaswap.

Agnimandya

Rasadushti

Ushna, Tikshna Ahar

Yonistrava

Vataprakopa

Kapha-pitta dushti

Rasavah-nadi avarodha

Vatak Ahar-Vihar, shoka, Bhaya, chinta.

As the signs & symptoms are not found according to types of upvishtak, there is difficult in labeling types according to classics. The treatment of Upvishtak mentioned in samhitas is mainly anuvasn basti, jeevaniya, Bruhaniya, madhur aushadhi dravyas, mansahar and yanvahan. Medicated milk or ghee is also recommended. In the phalshrutri of Madhumalinivasant it is said to be Garbhavruddhikar and sukhavaha to Garbhini. So the drug is selected for the study. The contents of the drug and prepared drug are easily available in the market and it is cost effective & palliative.

Though the Madhumalinivasant is very widely used drug by Ayurvedic practioners since many years. The animal study was done to access the safety of Madhumalinivasant if given during pregnancy. In animal study Madhumalinivasant is given to rats from the first day of pregnancy till weaning of pups in regular dose and five times human dose to asses toxicity. In Madhumalinivasant group weight gain is more than placebo group and Litter
size in is high as compared to other groups. Survival of the conceived ovum might be increasing with the drug. Litter size varies in every rat. So the weight gain of the pups cannot be compared. When all pups are followed up to the weaning any bad effect of drug was not found in structural and behavioral pattern of pups. After investigations and HPE toxic effect are not found on Liver, Kidney etc.

**Discussion on clinical observations:**

Incidence of Upvishtak is mainly seen in age group 20 – 25 yrs. (57.26 %) Patients visiting our OPD mainly belongs to economically and socially lower class. Early marriage is very common in this class, so chances of early conception increases. Incidence of Upvishtak is more in primi gravida, this may results in to high occurrence of Upvishtak in this age group.

Because of early marriage and less education majority patients are house wives.

Incidence of Upvishtak is mainly seen in primi gravida (45.54 %). After marriage women has to face multiple challenges. Fear about married life, new relations, atmosphere and customs leads to mental stress. If early pregnancy occurs fear abut pregnancy and delivery adds another stress. All above factors can cause IUGR.

Vatapradhan prakruti patients found more prone for IUGR. For poshan and pushti kaphapradhanata, snigdha, shlakshna, sthira and sandra guna of Kapha are required. In Vatapradhan prakruti patients due to lack of above gunas and excessive ruksha, tanu, chala and shighra guna
of Vata these patients are apachit sharir and more prone for Upavishtak. Vatapradhan patients are more prone as Upvishtak occurs due to vitiation of Vata.

When menstrual history of the patients was taken 21 cases are having history of scanty menses. According to Ayurveda formation of placenta is from Raj. If the raja sanchiti before pregnancy is deficient, formation of placenta and upsnehan in placenta is hampered. This can lead to IUGR.

Rutu, Kshetra, Ambu and Beeja are four essential factors required for garbhanirmiti and garbhaposhan. Any defect in one or more factors can cause abortions, IUD or IUGR. In study groups total 11 cases are having previous history of abortion and 8 cases have history of IUD or neonatal death.

Upvishtak is the condition occurring in Mahati-Sanjatsar garbha, maximum cases are found in between group 29 - 34 weeks of pregnancy.

Weight gain per week and increase in fundal height per week is found significant in group I, i.e. an average weight gain is 0.4 kg and increase in SFH is 1 cm in this group. This result is found due to garbhavruddhikar effect of Madhumalinivasant. In some cases weight gain is more due to garbhinishotha. As the girth of abdomen varies with distention and malanuloman it is not considered as growth parameter.

Garbhavruddhikar effect of Madhumalinivasant is mainly seen with the USG done after 1 month. 15 cases
delivered before completion of 1 month treatment. So their USG findings are not available. Increase in gestational age by USG done after 1 month is significant in group I, i.e. 3.34 weeks.

Oligohydramnios is increased in 2 cases in control group but remains steady in trial group. Early placental aging is regressed in 3 cases in trial group and increased in 2 cases in control group. Placental calcification is seen less in trial group than control group. These findings may be due to increased placental functioning by Madhumalinivasant.

Serum protein levels in trial group shows highly significant which reveals mansabalaya action of Madhumalinivasant. The drug increases the appetite that leads to good digestion and increased absorption. This shows increase in Serum protein level. Average gestational age at delivery is 38.5 wks in trial group and 37.8 wks in control group. 'p' value is significant. This may be due to garbhashaya balya effect of Madhumalinivasant. There is no significant difference in mode of delivery in both the group.

Average baby weight is 2676.3 gms in trial group and 2330 gms in control group. 'p' value is highly significant. This shows the garbhavruddhikar effect of Madhumalinivasant in trial group. In cases where IUGR occurs at early trimester the weight gain of babies found less. In cases where mental stress and garbhopdrav shoth are present weight gain of foetus is less.

Etiological factors found in study are mainly –
Aharaj:- Stale, dry, spicy, atiushna, tikshna food item atimansashan.
Viharaj:- Late night sleep, deevaswap, vegdharan and overexerssion in household duties.
Psychological- Mainly mental stress from familial problems, poor economy.
GIT - Diseases like hyperacidity krimi and grahani are found in the study.
Rajksheenata- It is found in 21 cases to avoid IUGR problems like rajaksheenata should be treated prenataly Garbhopdrava-Garbhopdrava like chardhi, pandu and shoth.
Addiction- Mainly tobacco chewing and use of black powder of tobacco as tooth pest.
PV discharge-In total 16 patient per vaginal discharge was found. out of that 3 cases are of placenta privia, having intermiment vaginal bleeding and 13 cases having leucorrhea.

Due to agnivardhak, malanulomak and vatashamak effect of Madhumalinivasant, symptoms like agnimandya, adhaman, urodaha, udarshool, malavashtambha, dravamal and Katisshool are found decreasing in trial group. In contral group symptoms like agnimandya, adhaman, urodaha and udarshool were found increasing. This might be because amino acids are heavy for digestion.

**Mode of Action of Madhumalinivasant as Garbhavrudhikar:**
The drug Madhumalinivasant used in the treatment of Upvishtak is useful in following ways:

1) **Action on Agni:** Hingul, Marich, Gavhala, Kachora, Dadim, and Nimburas are all deepan and pachan drugs. They together act as agni deepan and carry out pachan of provoked doshas. Thus this kalp plays a major role in improving the agni.

2) **Action on Rasa:** Fetal nourishment is totally dependent on the rasadhatu of mother. The above said dravyas in Madhumalinivasant are responsible for Rasadhatwagni vardhan which leads to quality Rasadhatu formation along with good Raktaprasadakatatva. This leads to good fetal nourishment, moreover eggs are quite similar to Rasa and we know like improves the like. Thus it is useful in Rasa formation.

3) **Action on Rasavahan:** Circulation of Rasadhatu is carried out by Hridaya. Hridaya is the mool sthan of Rasavaha strotasa. If a quality Rasadhatu is formed it gives good strength to the Hridaya for its functioning. Dravyas like Dadim, Nimbuka in Madhumalinivasant are Hridya in nature and thus are helpful in strengthening the Hridaya.

In short increased strength of Hridaya along with the vyan vayu improves the Rasavahan.

4) **Action on Apara:** The Rasa circulated by the Hridaya reaches Garbhanabhinadi through apara by upsnehan nyaya. This Rasa is responsible for fetal nourishment. In Upvishtak accumulation of doshas in Apara disturbs the upsnehan in apara. In such
circumstances drugs in Madhumalinivasant like Marich & Kachora prove helpful by their Sookshma strotogamitva nature. These drugs carry out the pachan of doshas accumulated in apara and improve its upsnahan. This also leads to dosha pachan in Garbhanabhinadi.

Marich is a Pramathi drug, thus it acts by removing the mala in subsumes strotasas. Along with this vasodilator activity of Kachora proves helpful in improvement of upsnahan of Apara.

Not only this but Marich & Kachora are Artavajanan in nature. Thus are responsible for improving uterine circulation.

4) Action as Krimighna: - This kalp also has Krimighna action. The drugs Hingul, Marich, Dadim and Kachora are Krimighna in nature. They prevent various vaginal and uterine infections. This check on the uterine infection ultimately causes proper fetal nourishment and growth.

Not only this but the ingredients like Dadhim, Kachora, Gavhala in Madhumalinivasant are tikta (Bitter) and Kashay (Astringent) in nature. Due to these properties they are very useful in per vaginal white discharge. Thus the dhatukshaya occurring due to per vaginal discharge is avoided and is helpful in nourishment and growth of the foetus.

The Hingul in this kalpa is Rasayan in nature. This ingredient is useful in increasing the number of muscle fibers and their strength.
The hen’s egg in the kalpa is mainly responsible for nourishment and bruhan of the Garbha. The snigdhatwa (oliation property) in eggs with the help of other drugs in the kalpa reach the Sookshma strotasas and thus Rukshatwa of Vata dosha is taken care of.

Madhumalinivasant also has its action on the agni of foetus. It improves the fetal agni which ultimately acts on the rasa received from mother for fetal nourishment. Sookshma pachankriya is carried out on this rasa which leads to proper growth of the foetus.

In short Madhumalinivasant improves maternal agni which leads to dosha samyawastha. This leads to quality rasadhatu formation.

It acts at the level of apara by doshapachan and improving its upsnehan. This is responsible for nourishment of Garbha and its proper growth which is seen through the weight gain of the foetus.

It also acts on fetal agni which carries out the Sookshma pachan of rasa received from mother and thus causes proper fetal growth.

Madhumalinivasant is one such a drug which acts by
- Agni vardhan
- Rasayan
- Sukshma strotogamitwa action
- Achieves dosha samyawastha and
- Bruhan.
Action of the Drug:

Madhumalinivasant

Hingul → Marich → Shathi → Priyangu → Nimbuka → Dadhim → Hen’s Egg

Deepan + Pachan

Pachan and Agnideepan

Rasadhatwagni Vardhan

Sarakat Rasadhatu Utpatti

Raktaprasadan

Nimbuka

Sookshma Srotogamitwa

Krimighna

Artavajanan

Hridya

Like improves the like

Garbha-Vridhdi

Prevent Vaginal & Uterine Infections.

Increases Uterine Circulation

Improvement In upsnehan

Proper Rasa-Rakta Vikshepan

Proper fetal growth