

GARBHINI MADHUMEHA AND ITS MANAGEMENT W.R.T GDM - A CONCEPTUAL STUDY

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ABSTRACT

Diabetes anomalously impact on pregnant women through the threats its poses to maternal and fetal health. In Bhasajaya Ratnawali, it is mentioned that excessive use of *atimadhura*, *atiguru*, *paryushita ahara* & *atibhojna* will lead to *ojomeha* in *garbhini*. *Acharyas* have advised *brumhana* for *garbhini* and indicated *hrudya*, *drava*, *madhura*, *snigdha aahara* for her. All these increases *kapha dosha* which is also the main responsible *dosha* for *madhumeha*. *Dushit kapha* leads to *dushti* of *dhatu*s and *updhatus* resulting in maternal and fetal complications. So, if *garbhini* takes *kapha vardhak aahara vihaar* other than indicated or *prakriti virudh aahaar* she may be diseased by *madhumeha*. The pregnant women should be treated just like a pot filled with oil, as slightest oscillation of such pot causes spilling of oil, similarly slightest excitement to the pregnant woman can initiate abortion. *Acharya kashyapa* has mentioned that physical & psychological disorders of a *garbhini* are similar to any other individual due to similarity in *dosha* and *dushya*, but their treatment differ in *Garbhini*. At the same time they contraindicated *Atitrapana* and *Guru Ahaara* to her. Her *Dooshit Kapha* lead to *Dushti* of *Dhatu*s and *Updhatus* resulting in fetal complications. It can be prevented by screening them for their *Prakriti* and managed if diseased *Garbhini* *madhumeha* by *Samshaman Chikitsa* after studying their constitution and *Dosh Dushya Dushti*. Diabetes in a pregnant mother can either be a pre-existing or GDM. “Gestational diabetes mellitus” is defined as carbohydrate intolerance with onset or first recognition during present pregnancy. GDM usually presents late in the second or during the third trimester.

KEYWORDS: *Garbhini madhumeha, samprapti, prakritiparikshan, Samshamana Chikitsa, GDM.*

INTRODUCTION

Women diagnosed to have GDM are at increased risk of future diabetes, predominantly type 2 diabetes mellitus. Pregnancy is characterised as a diabetogenic state in which insulin resistance occurs. In order to maintain glucose homeostasis, the pancreatic beta cells need to secrete more insulin. Hyperglycemia in pregnancy has adverse effects on both mother and fetus as macrosomia, polyhydramnios, birth trauma, and recurrence of GDM in subsequent pregnancies. About 1-14 % of all pregnancies are complicated by DM and 90% of them are GDM. Nearly 50% of women with GDM will become overt diabetes (Type-II). Although diabetes during pregnancy is often asymptomatic, the consequences are substantial. Metabolic derangements may present at the time of conception. The availability of insulin, beginning in 1922, restored fertility and virtually

abolished maternal mortality. Prevention of GDM should start intrauterine and continue throughout pregnancy & postpartum. Classification of Diabetes in pregnancy are:

1. Overt Diabetes: Women known to be diabetic before the onset of pregnancy.
2. Gestational Diabetes: This diagnosis is made when diabetes is detected in the course of the pregnancy and is defined as carbohydrate intolerance of variable severity first diagnosed during pregnancy.

Distinguish GDM from Pre-gestational DM

Abnormal Glucose Tolerance, onset with pregnancy or detected first time during pregnancy, no h/o of pre pregnancy DM or IGT, HbA1c is usually 5-6 % is desirable in GDM, in DM + Pregnancy it is > 7.5 , GDM is a forerunner of T2DM.

The White classification of gestational diabetes

Class	Onset	Fasting plasma glucose	2 hr postprandial glucose	Therapy
A1	Gestational	<105mg/dl	<120mg/dl	Diet
A2	Gestational	>105 mg/dl	>120mg/dl	Insulin

Epidemiology

The prevalence of GDM in India varied from 3.8 to 21% in different parts of the country, depending on the geographical locations and diagnostic methods used. GDM has been found to be more prevalent in urban areas

than in rural areas. Prevalence of GDM varies worldwide and among different racial and ethnic groups within a country. Overall, 90% of diabetes in pregnant women is gestational and about 10% pre gestational diabetes.

Screening Logarithm

High risk for GDM	Screen for GDM immediately	Test 75g or 100r OGTT Result – Positive Diagnosed for GDM	Negative screened for GDM @ 24-28wk
Average risk for GDM	screened for GDM @ 24-28wk	Positive- 75g or 100r OGTT Diagnosed for GDM	Negative - Monitor pregnancy closely
Low risk for GDM	Screen	Positive - screened for GDM @ 24-28wk	Negative - Monitor pregnancy closely & 75g or 100r OGTT

Nidana

आहारज – kaphakara ahara- guru, snigdha, sandra, picchila, sheet, madhura ahara atisevana.

Navannapana, sheetal & dushit jala, ikshu, guda, dadhi atisevana,

Viruddha bhojana (banana with milk, mixing milk to curds), paryushitahara.

विहारज- Divaswapna, atihasyam, alashya, atisnehana.

मानसिक- Chinta, Shoka, bhaya.

रोगज- Aajeerna, agnimandya, shotha visham jwara

अन्यज- Bija bhaga ayvaya dushti, Abhigataja

Purva Rupa

हन्स अण्डास्थि समुज्ज्वल भाग तुल्यं I मूत्रं तण्डुलं जलं प्रतिमं च शुक्लं II

Mutrm tandul (like rice washed water and white in color), Sweda (Sweating), Anga Gandha – (bad body odor), Shithilangata (flabbiness of body due to medovridhi), Shayyasana Rati (liking for constantly lying on the bed, feeling sedentary), Ghana Angata (bulkiness of the body due to increase anabolism), Sheeta Priyata (liking for cold things), Gala, Talu Shosha (dryness of the throat and palate), Madhuraaasya (sweet taste in the mouth), Kara Pada Daha (burning sensation in hands and legs due to deficiency of vitamins).

Samprapti

Garbhini madhumeha

Samprapti ghataka

Dosha: shleshma pradhana Tridosha

Dushya: Rasa, rakta mamsa, meda, majja, sukra, kleda, lasika & ojas.

Srotas: mootravaha, medovaha.

Sroto dushti prakara: Sanga

Agni: Jatharangi mandya & Dhatwagnimandya

Adisthana: Basthi,

Vyaktasthana: Sarva sharira

Vyadhi swabhava: Achirakari (in garbhini)

Sadhyasadyatha: krichra sadhya

Lakshanas

Effect of varjya ahara & vihara sewana on garbhini in Garbhavastha: Garbha ativriddhi, Garbhodaka ativriddhi, Mutra ati pravratiti, Yoni kandu, Yoni srava. In Prasavaavastha: Mudhagarbha, Purvakalik prasava, Kalatit prasava.

Effect of varjya ahara & vihara sewana by garbhini has been described by Acharya charaka & vagbhatta I.

Dietetics or Mode of Life

मधुरनित्या प्रमेहिणं मूकमतिस्थूलं वा I स्वप्ननित्या तन्द्रालुमबुधमल्पाग्निं वा II

By following dietetics or mode of life like *nitya madhura aahra* and *vihaara* like excessive sleep, the fetus or child will suffers from *prameha, atisthula, mukam, Tandralu, agyani, murkha and alpaagni* child.

Acharya kashyapa has mentioned clinical features indicating intrauterine death of fetus and abortion.

बहु भुङ्क्ते तु या अत्यार्थं बहुशो बहुमूर्चिता I भवेद तस्याः पतेद गर्भो गर्भिण्यास्तु न संशयः II

A pregnant woman who eats frequently in large quantity and becomes repeatedly unconscious have chances of abortion.

Maternal & Fetal Complications

Good medical care and obstetric care throughout pregnancy, labour, puerperium usually results in a favourable outcome. However complications can be seen in patients with uncontrolled diabetes.

Effects of Diabetes on Pregnancy

- Abortion, maternal Infection-UTI, candidiasis, high risk of pre-eclampsia, polyhydramnios

Effects of Diabetes on Pregnancy

- Birth trauma-shoulder dystocia , caesarean section – fetal macrosomia, CPD, recurrence of GDM, prolonged labour

Fetal Complications

- Birth trauma as: Macrosomia, shoulder dystocia, hyperglycaemia, hypocalcemia

Neonatal Complications

- Respiratory distress, hypoglycaemia, hypocalcaemia, hyperbilirubinemia.

Screening and Diagnosis

Whom to Screen for GDM?

Low Risk Group

- Age <25 yrs, Low prevalence of GDM, Weight normal before pregnancy, No h/o abnormal glucose metabolism, No h/o poor obstetrical management. Average Risk Group
- Screen around 24–28 weeks of gestation, Marked obesity, Strong family h/o type 2 DM , Prior GDM or Glucosuria.

High Risk Group

Age >30, Obese, ethnic group, positive family history of diabetes, as soon as possible after conception, if not diagnosed diabetes should be repeated at 24–28 weeks of gestation or at any time if a patient has symptoms or signs suggestive of hyperglycemia, having a previous birth of an overweight baby of >4kg or more, previous unexplained still birth, presence of polyhydramnios , recurrent vaginal candidiasis in present pregnancy, persistent glucosuria.

Ayurvedic Line of Management

Ayurveda helps in limiting the maternal and fetal complications. Herbs are helpful as a supportive treatment along with the modern medicine under supervision.

1.) Pre-conceptional care mentioned by *Acharyas* seems to be give a great contribution in getting the healthy progeny. *Acharya* have mentioned *snehana*, *swedana*, *vamana*, *virechana* & *basti karma* for purification of body. By proper purification and *samskaras*, *unvitiated yoni*, *garbhasaya*, *manas*, and *beeja* are ensured leading to healthy pregnancy. The woman should follow the *ritumati paricharya*. *Acharya vagbhata* have advised *phala ghrita*, *mahakalyana Ghrita* and *acharya kashyapa* have advised *lasunaksheera paka* for the women. The woman should have positive thoughts, Happiness and peaceful mind.

2.) *Garbhini paricharya*- *Acharya Charka* says that woman desirous of producing a child should give up non-congenial diet and mode of life.

Acharya Sushruta advised the woman from very first day of pregnancy should remain in high spirit, pious, wear

clean white garments and worship. Her sleeping and sitting place should be covered with soft cushion not be very high. *Acharya Vagbhata I* has said the pregnant woman is fit for the use of *brumhana* therapy. *Acharya Vagbhata II* has advised use of *jivaniya gana dravas* for internal use.

Acharya kasyapa says that the *ahara sevan* by the pregnant woman become *satmya* to the fetus. Thus the *aahara* should be taken considering *desha*, *kala*, and digestive capacity. She should use Hot water milk and meat. Milk provide nourishment and stability to the fetus.

Acharya Yogaratnakara has enlisted following articles beneficial for pregnant woman is *sali*, *sastika dhanya*, *mudga*, *godhuma*, *lajja saktu*, *navneet*, *ghrita*, fruit of *amalaki*, *draksha*.

Basti karma has been advised by *Acharyas* during 8 & 9 months of pregnancy.

Yoga & Pranayama like *Siddhasana*, *Shavasana*, *Ujjayi pranayama*, *Bhramri pranayama*, *Anuloma-viloma* are helpful.

3.) *Ayurvedic* approach when diagnosed as *Garbhini madhumeha*

1. *Nidaana parivarjana*
2. *Ama pachana chikitsa*

Deepana pachana yogas are: *Pippali ksheera paka*, *Dipyakadi dhoorna*, *Jeeraka kashaya*, *Yavagu*, *peya* processed with *deepaniya* drugs.

Supportive line of treatment:

Garbha rakshaka kashaya, *Garbha pala rasa*, *Khadiradi kashaya*, *Phala sarpi*, *Chandraprabha Vati*, *Vasant Kusumakar Rasa*, *Khataka khadiradi kashaya*, *Maha tiktaka kashaya*, *Chandanasava*.

Sthanika chikitsa: Prakshalana with *pachavalkala qwatha* or *triphala qwatha*, *Yoni pichu*

Modern Line of Management

The components of GDM management include: Adequate monitoring of blood glucose, Medical Nutritional Therapy (MNT), Physical Activity, Pharmacological therapy

Medicinal Nutritional therapy is a cornerstone in management

The goals of such therapy are: To achieve normoglycaemia, to provide the necessary nutrients for the mother and fetus, to prevent starvation Ketosis, provide adequate weight gain, diet with 2000-2500 kcal/day for normal weight woman and restriction to 1200-1800 kcal/day for over-weight woman is recommended and the calories should be distributed into three meals and three snacks. A bed time snacks is instead to prevent ketosis in fasting.

Daily caloric intake & pregnancy weight gain in women with GDM with or without concomitant insulin therapy

Current weight in relation to ideal body weight	Daily caloric intake (Kcal/kg)	Recommended pregnancy weight gain (lb)
<80-90%	36-40	28-40
80-120%	30	25-35
120-150%	24	15-25
>150%	12-18	15-25

Physical Activity

Planned physical activity for 30 min/day is recommended. Walking or arm exercise while seated in a chair for atleast 10 min after each meal.

Pharmacology Therapy

Patients taking oral hypoglycaemics or insulin in the pre-pregnant state. GDM not controlled on MNT alone (glucose levels on repeated monitoring fasting >105 mg/dl and post-prandial >120 mg/dl). Patients taking insulin should monitor their glucose levels daily. Patients on dietary management alone may have their fasting plasma sugar and 2-hour postprandial levels checked in the clinic every 1 or 2 weeks. Blood sugar level should be around 90mg/dl before meals & not to exceed 120mg/dl, 2 hours after meals.

Obstetric Management of Gdm**Fetal Monitoring**

This should aim at recognizing the complication of pregnancy associated with diabetes.

Baseline ultrasound for gestational age NT Scan- At 11 - 14 weeks. Maternal serum alpha-fetoprotein concentration is estimated at 16-20wks gestation in an attempt to detect neural tube defects in the fetus. At 18-22 weeks: Anomaly scan. At 24-26 weeks: fetal echo may be done to detect any cardiac anomaly in the fetus.

Last trimester scan: At 36-38weeks. Antenatal checkup once in 2 weeks until 32 weeks and then weekly. Hospitalization should be advised whenever there is poor control of diabetes or if complications develop.

Induction of Labour

Young primi gravida without any obstetric abnormality. Multipara with a good obstetric history. Development of pre-eclampsia. 40 weeks gestation with no labour pain.

Route of Delivery

Vaginal delivery can be attempted if the following criteria are fulfilled:
Longitudinal lie with vertex presentation Adequate intrapartum foetal monitoring. No cephalopelvic disproportion (CPD)

DISCUSSION

Timely action taken now in screening all pregnant women for glucose intolerance, achieving euglycemia in them and ensuring adequate nutrition may prevent in all

probability of transmitting glucose intolerance from one generation to another.

Thus, GDM offers an important opportunity for the development, testing and implementation of clinical strategies for diabetes prevention.

Almost half of the women did not reach sufficient control with metformin alone and needed supplemental therapy with insulin; compared to those treated with insulin alone.

There are broad explanation regarding treatment of *Madhumeha*, but application of same medication in garbhini needs more research.

CONCLUSION

Gestational diabetes is a common problem in India. Risk stratification and screening is essential in all pregnant women. Strict glycemic targets are required for optimal maternal and fetal outcome. Patient education is essential to meet these targets. Long term follow up of the mother and baby is essential. According to *Ayurveda* efforts of having healthy baby commences with pre-conception care and management. But in India most of the females visit clinics after having pregnancy, so role of pre-conception care and management is very limited. *Garbhini parichrya* by monthly regimen described by various *acharyas* is highly effective for this purpose. If pregnant woman strictly follows *Garbhini parichrya* and *ritumati charya* before conception, diseases of *garbhini* and *garbha* can be avoided.

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