



## Nidaan Panchak (Possible Pathogenesis) Of Garbhini Prameha (Gestational Diabetes) And Its Screening Through Ayurveda.

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### Abstract :

Diabetes uniquely affects pregnant women through the threats it poses to maternal and fetal health. Acharya Kashyapa has mentioned that physical and psychological disorders of a Garbhini are similar to any other individual due to similarity in Dosha and Dushya, but their treatment differs in Garbhini. Ancient Acharyas had not given any specific description of Garbhini Prameha. Present article frames the possible pathogenesis of Garbhini Prameha by considering the Dosha and Dushya of Prameha in Garbhini and a screening method for preventing it through Prakriti Parikshan. Focusing on Garbhini, Dosh, Dushya, Nidaan, Samprapti, Roop, Updrava and Chikitsa of Prameha was studied from ayurvedic texts. Modern literature about gestational diabetes was also collected and studied. Acharyas mentioned Garbhini to be fit for Vrmhana and indicated Hridya, Drav, Madhur, Snigdha Ahaar for her. All these increase Kapha Dosha which is also the main responsible Dosha for Prameha. At the same time they contraindicated Atitrapana and Guru Ahaar to her. So, if a Garbhini takes Kafvardhak Ahaarvihaar other than indicated or Prakritivirudh Ahaar she may be diseased by Prameha. Her Dooshit Kapha leads to Dushti of Dhatus and Updhatus resulting in fetal complications.

Garbhini receiving Kafvradhak Ahaarvihaar for her health maintenance and fetal growth are more prone to Prameha. They can be prevented by screening them for their Prakriti and managed if diseased by Sanshaman Chikitsa mentioned for Prameha after studying their constitution and Dosh Dushya Dushti through Ayurveda.

**Keywords :** Garbhini Prameha, Samprapti, Prakritiparikshan, Sanshaman Chikitsa

### Introduction :

Prameha is a well described disease in all Ayurvedic classics. Its historical origin has been mentioned by Acharya Charak by the consumption of Havish- a special type of food made from Milk, Sugar, Ghee, Rice, etc. during the disruption of Yagya organized by Daksha Prajapati<sup>1</sup>. Prameha is defined as passing of urine profusely both in quality and frequency<sup>2</sup>. Though details of Prameha have been quoted by

our ancient acharyas, very much description of Garbhini Prameha have not been given by them. Acharya kashyapa said that physical and psychological disorders of a Garbhini are similar to any other individual due to similarity in Dosha and Dushya, but their treatment differ in Garbhini<sup>3</sup>. Keeping this in mind the pathogenesis of Garbhini Prameha is framed .

Different classifications of Prameha are given in our texts.

**Table 1. Classifications of Prameha**

<b>Nidaan based (Etiological)</b>	i) Sahaja (genetic factors) ii) Apathya nimittaja (diet factors)
<b>Doshik (Clinicopathological)</b>	i) Vataj ii) Pittaj iii) kaphaj
<b>Deha prakriti based (Constitutional)</b>	i) Sthula or Balavana (Obese) Pramehi ii) Krishya or Dourbalya (Asthenic) Pramehi

As the term Gestational Diabetes is defined as “ the carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy.<sup>4</sup>”Here only Apathya Nimittaja (diet factors) Prameha is considered in reference to Garbhini Premeha .

**Material and method :** The perception of Ayurveda has been enhanced by three great authors Charak, Sushruta And Vagbhata. The literature cited by them as well as modern literature has been referred in regard to present paper.

**Nidaan of Garbhini Prameha :** Acharya Sushruta mentioned that the persons having sedentary life style with lack of physical exercise and day sleeping and consuming cold,oily, sweet, fatty and liquid diet are to be diseased by Prameha in future<sup>5</sup>.The state of being Garbhini is one such condition in which the above mentioned diet is prescribed by Achrayas but with certain do,s and don'ts. Thus if a Garbhini Stree does not follow the dietary regimen mentioned for her she is likely to be Pramehi easily.

**Aharaja Nidan of garbhini Prameha (related to diet)<sup>6,7</sup> :**

- Adhyasana, Guru,Sheet, Madhura Ahara Atisevana : Pregnant women taking large amount of food at one time instead of small meals at regular interval, high caloric diet, excessive sweets and carbohydrate rich beverages.
- Amla Rasa Ahara Atisevana, Lavana Guna Ahara Atisevana: Consumption of excessive sour and salty diet.
- Navannapana,Ikshu Vikara, Guda Vikara ,Ksheera, Dadhi Atisevan (increases kapha dosha).
- Anoopaa, Udaka & Gramya Mamsa Atisevana

- Meda Vardhaka Ahara Atisevana(consumption of fat rich diet )
- Hayanaka, Vilepi, Tila Atisevana etc...

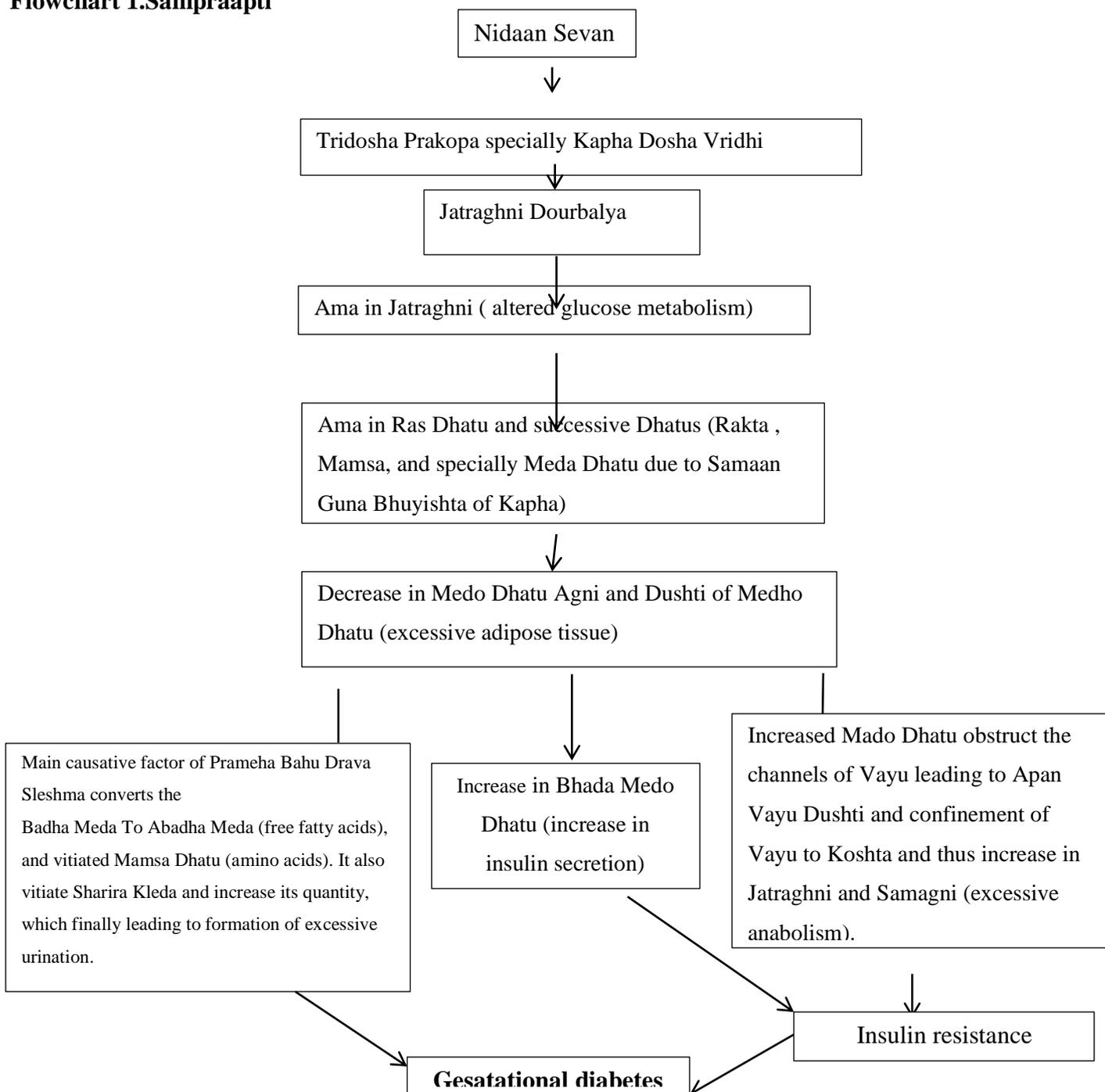
**Viharaja Nidan of garbhini Prameha (related to lifestyle) :**

- Divaswapna (excessive sleeping more than 2 hours in daytime and 8 hours in night).
- Ashya Atisuka, Alashya, Achinta (avoiding her usual activities and mild exercise,)

**Prakriti predomoinance:** Kaphaja

**Samprapti<sup>8</sup> :** Following pathogenesis of Garbhini Prameha can be framed on reviewing the available literature.

**Flowchart 1.Sampraapti**



### **Pooravroopa of Garbhini Prameha :<sup>10</sup>**

- 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).
- Hrut, Netra, Jihva, Shravana Upadeha (a feeling as if these regions is covered with some paste / coating).
- Ghana Angata (bulkiness of the body due to increase anabolism).  
Kesha, kha, nakha Ati Vriddhi( excessive growth of hair and nails),
- 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).
- Mutre Pipilika (swarming of ants on the urine, an indication of the infection may manifest as vaginitis).

Acharya Sushruta also mentioned that if an individual passes excessive urine in quantity and frequency along with the presence of full or some of the half premonitory sign and symptoms then the individual is said to be suffering from Prameha<sup>11</sup>. That is if half of these symptoms along with renal glycosuria is present in Garbhini Stree she can be further investigated for gestational diabetes.

### **Symptoms (Roopa): Prabhoota-Aavilamootrataa<sup>12</sup>**

The only clinical feature of Prameha given by Acharyas is the passage of excessive turbid urine . Though the frequency of urine is increased normally in first and third trimester of pregnancy, excessive turbid urine must be noticed.

### **Garbhini Prameha Updrava :<sup>13</sup>**

The following Updravas of Prameha are mentioned by Ancient Acharyas :

Trsihuna (thirst), Atisara (diarrhea), Jwar ( fever due to infections following decreased immunity), Daha (burning sensation due peripheral neuropathy), Daurbalya (weakness), Arochaka (anorexia), Avipaka (indigestion), Trishna (Hyperglycemia-increased glucose level in blood-glycosuria-water enters renal tubules by osmosis-polyuria-dehydration),

Daha and Dorbalya (Reduced availability of glucose to cells and neurons- neuropathy),

Murcha ( Increased metabolism of fat-ketoacidosis-diabetic coma ),

Jwar (Glycosuria-predisposition to vulvitis and infections),

Along with the above mentioned classical complications , other maternal and fetal complications which may occur due to Dosh And Dushya involvement are described below :

### **Maternal complications :**

- Kapha Dosha +Ambu+Ras Dushti: polyhydramnios

- Pit Dosha Dushti+Rakta Dushti: hypertension
- Kapha Dosa+Mamsa Dushti: proteinuria
- Kapha Dosha+ Rasa Dushti Medo Dushti : hyperglycemia
- Blockage of channels of vayu by Meda result in Vat Dosha Prakopa : miscarriage in early pregnancy or preterm labour.
- Ojo Dushti leads to decrease maternal immunity resulting in various infections such as bacterial vaginitis which may further lead to other complications such as premature rupture of membrane, preterm labor and chorioamnionitis.

### **Fetal:**

Acharya Sushruta said that Kshetra, Ambu, Beeja & Ritu are the 4 factors which are responsible for healthy progeny<sup>14</sup>. Here Dushti of Ambu and Beej in Garbhini Stree suffering from Prameha result in various fetal complications due to Beej Bhag and Bhejbhaga Avyayava Dushti.

- Kapha + Vata+ Artava+Shukra Dushti of parents result in Beej Dushti : congenital malformation of fetus.
- Kapha +Medo Dushti of mother result in Dosha Prakopa specially Kapha of fetus resulting in increased Vridhi of Garbha which leads to fetal macrosomia and shoulder dystocia at the time of labor .Other complications such as fetal distress, birth asphyxia, brachial plexus injury, cephalhematoma also occur due to difficulty in delivery of big size baby.

Acharya Charak had clearly mentioned that intake of excessive sweet articles by Garbhini Stree make fetus to suffer from Prameha ,obesity, and dumbness.<sup>15</sup>

Thus the fetus of Garbhini who is suffering from Prameha is likely to be Pramehi and obese . .Various fetal complications such as hypoglycemia and intrauterine death may occur.

### **Screening of patients to rule out risk of Garbhini Prameha :**

Ayurveda has its own clinical methods for assessment of pathological conditions known as Dashvidh Pariksha (ten fold examination).According to Acharya Charak patient should be examined in respect of Prakriti (constitution of body), Vikruti (pathological examination), Sara (perfectness of the body tissue / excellence of Dhatus ), Samhana (examination of compactness of body), Pramana (proportion may referred to as BMI), Satmya (suitability), Satva (examination of psychic constitution) , Aaharashakti based on Jaran Shakti and Abhyavaharan Shakti (digestive power) , Vyayamashakti (strength by exercise) and Vaya ( age of patient).

Based on following criteria of assessment screening method of Garbhini to rule out Prameha is developed. Among from them main emphasis is given on Prakriti. Prakriti is the basic constitution of an individual which is fixed at the time of fertilisation depending on the predominance of the Doshas and generally

remain constant throughout the life. Among the seven type of Prakriti mentioned only the three main types viz, Vat, Pit Kapha are taken for examination. As Prameha is Kapha Dosha Pradhan Vyaadhi Garbhini with Kapha Prakriti is more predominant to Prameha and and needs more awareness and supervision.

Based on the tenfold examination Garbhini Stree are classified into three risk groups as follows :

**Table 2. Screening Criteria For Garbhini Prameha**

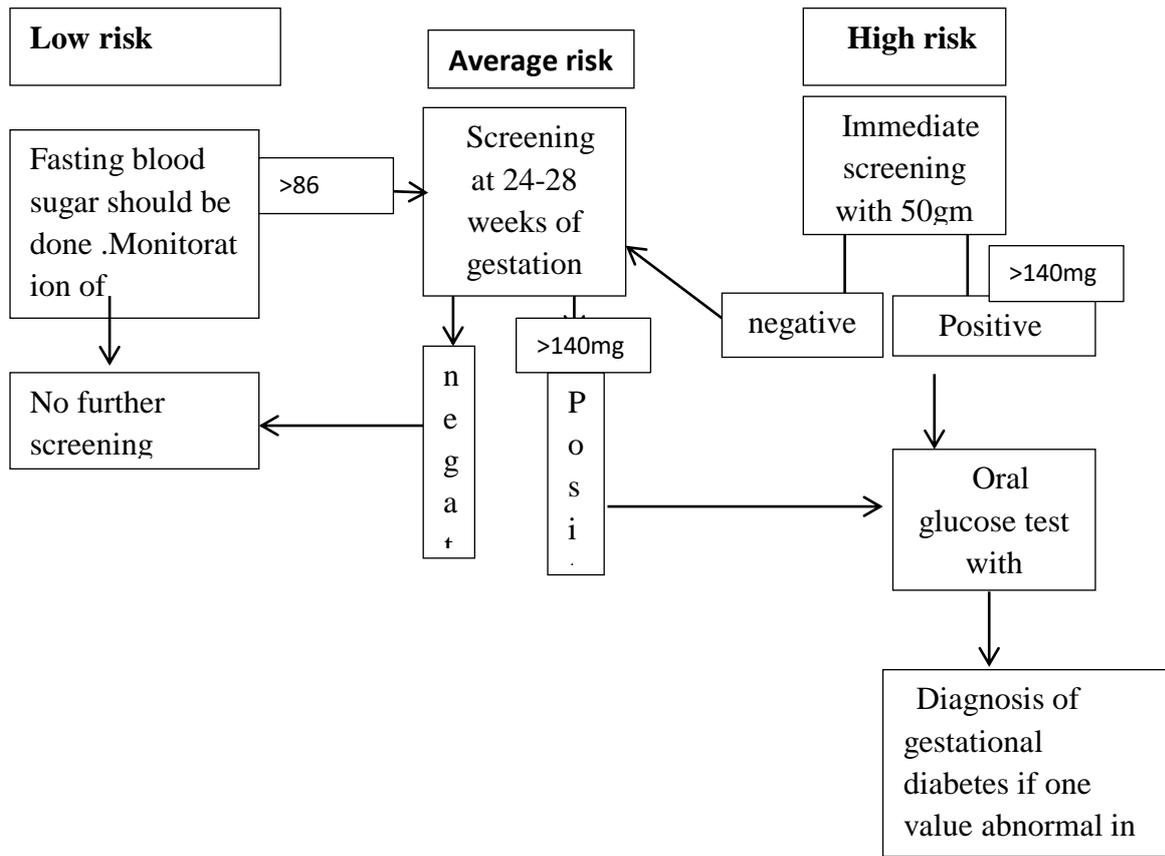
<b>Dash Vidh Pariksha Bhav</b>	<b>High risk</b>	<b>Average risk</b>	<b>Low risk</b>
1.Prakriti (genetic constitution)	Kapha Pradhan	Vat pitaj Vat kaphaj Pit Kaphaj	Samprakriti
2.Vikrati (strength of pathogenic factors responsible for disease manifestation)	Medo Dhatu And Mamasa Dhatu Dushti	Ras dhatu dushti only not involving successive Dhatus.	Samdhatu (no Dhatu Dushti present at all)
3.Saar (essence of dhatus)	Medosaar and Mamsa Sar Garbhini	Madhyama Saar Garbhini (Saarta of all seven Dhatus present in moderate quantity)	Sarva Saar \Pravar Saar Garbhini
4.Samhanan (compactness of the body)	Avar Samhanan	Madhyama Samhanan	Pravar Samhanan
5. Praman (anthropometry can be measured through BMI )	Pravar Praman BMI>30	Madhyam Praman BMI 25-29	Avar Praman BMI<25
6. Satamya (suitability)	Pregnant women taking diet of one particular Ras and one who are not compatible with	Having combination of mixed diet and Single Ras Pradhan Ahaar on and off	Patient having diet mixed of all six Ras and having suitability to Ghee, Dugdha Mamsa

	Madhur Ras diet earlier before pregnancy		Ras and Madhur Ras
7.Satva (psychological examination)	Avar Satva Women with inferior mentality neither responding to counselling nor giving regular follow ups.	Madhyama Satva Women who are not conscious earlier but now responding to the counselling done to them.	Pravar Satva Women who are themselves conscious for their state of pregnancy and to the physiological changes going in their body and giving regular follow ups

8. Ahaar Shakti (food intake and digestive capacity)	Mandaagni stree with Avar Jaran Shakti(digestive capacity)taking high amount of food at a time	Tikshaagni Stree with Pravar Jaran Shakti (digestive capacity) but taking large amount of food at a time	Samaagni Stree with Madhyama Jaran Shakti taking small meals at short interval
9.Vyayam Shakti (capability to do exercise)	Having Avar Shakti, avoiding her usual day to day activities and having sedentary life style.	Madhyama Vyayam Shakti and doing her routine activities and physical work	Pravar Vyayam Shakti .Women doing yoga and mild physical exercise.
10. vaya (age)	Age >25	Age >25	Age <25

Depending upon the risk factors and history all Garbhini Stree should be screened for Garbhini Prameha as per following criteria :<sup>16</sup>

**Flow chart 2. Screening for garbhini prameha**



**Discussion:** Study of both science literature reveals that pregnancy is a diabetogenic state. Diagnosis of gestational diabetes is as much important as its treatment. If it is not detected and controlled on time it can lead to high rates of mortality. It also increases the risk of diabetes and obesity in foetus too as mentioned by Acharya Charak also.

Modern science reveals about insulin resistance in gestational diabetes resulting from the actions of various hormones such as human placental lactogen, oestrogen, etc on carbohydrate metabolism. Our ancient Acharyas also talked about this insulin resistance resulting from Aamutpati, Jatragni Vridhi, Dhatuagni Dorbalya, Medovridhi and blockage of channels of Vayu. The Poorvaroop and Roop of Prameha mentioned by Acharyas are the immediate consequence of reduced action of insulin hyperglycaemia and reduced availability of glucose to neurons. Maternal and foetal complications are discussed in detail in above lines both according to modern science and Ayurveda. A screening method based on Dashvidha Pariksha is developed to detect pregnant women with gestational diabetes which can be applied along with glucose challenge and oral glucose tolerance test.

**Conclusion :** Garbhini receiving Kafvradhak Ahaarvihaar for her health maintenance and fetal growth are more prone to Prameha. Garbhini stree is one of those people whom Acharya Sushruta described to be as future Pramehi. Thus she needs more consideration and attention to protect her from Prameha and its serious consequences as early as possible. The science of Ayurveda have various effective tools, which if applied

can play an important and helpful role in early detection of gestational diabetes. Women can be prevented by screening them for their Prakriti and Dosha, Dushya predominance and managed if diseased by Sanshaman Chikitsa mentioned for Prameha in ayurvedic classics.

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