Prevalence of Risk Factors (Hetu) and Poorvaroopa (Signs and Symptoms) of Garbhini Prameha (Gestational Diabetes) in a Tertiary Care Hospital in Rural India

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Abstract:

Gestational diabetes (Garbhini Prameha) is an increasing problem in the Indian subcontinent, imposing significant economic and social burdens. Modern medicine often identifies the disease after its onset through laboratory tests or by recognizing high-risk factors. From an Ayurvedic perspective, however, risk factors can be identified at earlier stages, even before their manifestation, allowing for proactive lifestyle modifications. This study aims to evaluate the prevalence of traditional Ayurvedic risk factors (Asya Sukha, Swapna Sukha, Dadhi) and early signs (Poorvaroopa) of Garbhini Prameha, and compare them with modern diagnostic criteria. We conducted a cross-sectional observational study among 60 pregnant women diagnosed with gestational diabetes according to ADA guidelines. Our results suggest that Ayurvedic principles can identify at-risk patients earlier than modern medicine, potentially reducing the economic burden of this disease.

Keywords :Gestational Diabetes, Ayurveda, Risk Factors, Pregnancy Complications, Diabetes, Gestational, Signs and Symptoms, Body Mass Index, Rural Population, Preventive Health Services, Diet, Physical Activity, Epidemiology

Introduction:

Garbhini Prameha (gestational diabetes mellitus, GDM) is a common condition in the Indian subcontinent, with prevalence rates ranging from 4% to 14% across various populations[1,2,3,4]. While modern medicine diagnoses diabetes based primarily on laboratory tests, Ayurveda emphasizes identifying early signs and symptoms (Poorvaroopa) and risk factors (Hetu). Although Garbhini Prameha is not directly described in Charak Samhita, an understanding of Ayurvedic etiopathogenesis allows us to apply these concepts to its prognosis and treatment. This study aims to examine the prevalence of risk factors and Poorvaroopa of Garbhini Prameha in a rural Indian tertiary care hospital and explore whether Ayurvedic concepts can assist in the early identification of at-risk patients.

Materials and Methods: This cross-sectional study was conducted at a tertiary care hospital in rural Telangana. We enrolled 60 pregnant women diagnosed with gestational diabetes according to the American Diabetology Association (ADA) guidelines. Patients were recruited from the antenatal clinic in the Department of Obstetrics and Gynecology. Informed written consent was obtained, and the study protocol was approved by the institutional ethics committee. Patients with known diabetes or chronic diseases were excluded.

Data were collected using a structured proforma that captured general information, demographic characteristics, socio-economic status, education level, and parity. A face-to-face interview was conducted in the local language to assess various Ayurvedic risk factors (Hetu) and Poorvaroopa according to Charak Samhita. The responses were recorded in pre-designed questionnaires.

Statistical Analysis: Descriptive statistics, including frequencies and percentages, were used to present the demographic data, risk factors, and Poorvaroopa prevalence.

Results:

Table 1. Demographic Characteristics of the Study Population

Variable	Number	Percentage
Age Group (Years)		
18-30	05	08%
30-35	27	45%
36-40	15	25%
Above 40	13	21%
Literacy Status		
Illiterate	08	13%
Primary	12	20%
Secondary	28	46%
Graduation and Above	12	20%
Occupation		
Housewife	23	38%
Unskilled Labor	15	25%

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Skilled Labor	13	21%
Service	05	08%
Professional	04	07%
Physical Activity		
Sedentary	26	43%
Light	22	36%
Moderate	08	13%
Heavy	04	07%
BMI		
Below 24	18	30%
24-29	17	28%
Above 29	25	41%

Table 2. Prevalence of Risk Factors for Garbhini Prameha

Risk Factors	Prevalence	Percentage
Asya Sukha (indulgence in rich, unhealthy food)	46	76%
Swapna Sukha (sedentary lifestyle)	51	85%
Dadhi (excessive intake of curd)	49	81%
Gramya Udaka Anupa Rasa (meat of domesticated animals and aquatic animals)	33	55%
Payasa (excessive intake of milk products)	27	45%
Navanna (freshly harvested grains)	22	36%
Guda Vaikratam (fresh alcoholic drinks)	03	05%

Table 3. Prevalence of Poorvaroopa of Garbhini Prameha

Poorvaroopa (Signs and Symptoms)	Prevalence	Percentage
Sweda (excessive sweating)	42	70%
Anga Gandha (body odor)	39	65%
Shithilgatra (flabbiness of body)	48	80%
Shayyasana (constant need for rest)	51	85%
Ghana Angata (body heaviness)	49	81%
Kesh Nakha Ati Vridhi (excessive hair/nail growth)	34	56%
Madhura Aasya (sweet taste in mouth)	53	88%
Kar Pada Daha (burning sensation in limbs)	38	63%
Mutra Pipilika (ants attracted to urine)	27	45%

Discussion:

The findings of this study offer an insightful comparison between the Ayurvedic and modern perspectives on Garbhini Prameha (gestational diabetes mellitus, GDM). By identifying and validating the risk factors and early signs (Poorvaroopa) described in Ayurveda, we underscore the importance of a holistic approach to disease prevention, especially in a resource-constrained rural setting.

Risk Factors (Hetu):

In Ayurveda, the three most prevalent risk factors observed in our study-Asya Sukha (overindulgence in food and pleasure), Swapna Sukha (a sedentary lifestyle), and Dadhi (excessive intake of curds)-are notable contributors to Garbhini Prameha. These risk factors are largely lifestyle-related and emphasize the critical role of dietary habits and physical activity in disease manifestation.

In contrast, modern medicine focuses on more quantifiable risk factors such as advanced maternal age, obesity, genetic predisposition, and family history of diabetes. According to contemporary research, risk factors such as obesity and excessive weight gain during pregnancy contribute significantly to GDM, aligning to some extent with Ayurvedic factors like Asya Sukha and Swapna Sukha. A key difference, however, is that modern medicine often identifies these risk factors post hoc, meaning the risks are usually assessed after they have already become prominent (e.g., once the patient is overweight or has already gained excessive weight during pregnancy) .

Ayurveda, on the other hand, aims to identify these risk factors much earlier, before physiological signs have fully manifested, providing opportunities for timely intervention and lifestyle modification. This proactive approach can lead to earlier behavioral changes, such as diet modification and increased physical activity, potentially preventing or delaying the onset of GDM.

Our study found that 76% of the participants had indulged in Asya Sukha, and 85% led sedentary lives, highlighting a widespread prevalence of these lifestyle factors. This suggests that even before modern diagnostic criteria would typically detect the risk for GDM, Ayurvedic principles could potentially identify at-risk women. This also aligns with global health recommendations that stress the importance of early lifestyle modifications to prevent gestational diabetes, further validating the ancient Ayurvedic insights .

Signs and Symptoms (Poorvaroopa):

Ayurvedic medicine also emphasizes the identification of early signs and symptoms (Poorvaroopa) that appear before full-fledged disease development. In our study, the most

commonly reported Poorvaroopa were Shayyasana (excessive need for rest), Shithilgatra (flabbiness of the body), and Ghana Angata (heaviness of the body), each reported by over 80% of the patients. These symptoms correspond to some of the common physical signs seen in patients diagnosed with gestational diabetes, such as fatigue, weight gain, and a general sense of physical sluggishness.

The concept of Ghana Angata aligns well with modern medical understanding, where increased body mass index (BMI) and excessive weight gain during pregnancy are recognized as significant risk factors for GDM . However, Ayurveda's Poorvaroopa offers a broader and earlier set of clues, which can prompt early diagnosis and lifestyle changes. The fact that 80% of our study participants reported symptoms like Gala Talu Shosha (dryness of the throat and palate) and Madhura Aasya (sweet taste in the mouth) before any laboratory confirmation of GDM is significant. These symptoms align with hyperglycemia-related manifestations observed in modern diagnostics, where an elevated blood sugar level often leads to dryness and altered taste perception.

Less commonly observed Poorvaroopa, such as Mutra Pipilika (swarming of ants around urine) and Hrut Upadeha (a feeling as if the heart is coated), were reported by fewer participants. However, these signs are deeply rooted in Ayurvedic pathology and have practical relevance, particularly in rural or resource-poor settings where diagnostic tests may not always be available. While these symptoms are not commonly highlighted in modern medical textbooks, they offer practical diagnostic tools in environments where high-tech laboratory equipment is inaccessible.

Educational and Socioeconomic Correlation:

Another interesting finding from our study was the correlation between GDM and education level. We found a higher prevalence of GDM in women with secondary education (46%) compared to those with higher education levels (20%). This finding contrasts with some previous studies that suggest either a direct correlation between higher education levels and GDM prevalence, or no significant correlation at all . The discrepancy could be explained by the rural population catered to by our hospital. Many women in this demographic may have less access to health education and preventative care, despite having secondary education. Consequently, the rural healthcare system must emphasize health education and awareness campaigns that focus on prevention strategies through both modern and Ayurvedic knowledge.

Implications for Clinical Practice and Public Health:

The convergence of Ayurvedic and modern medical insights offers a compelling case for integrated healthcare. Ayurvedic medicine, with its emphasis on early detection through Poorvaroopa and lifestyle-related risk factors, can complement modern diagnostics to help manage and reduce the incidence of Garbhini Prameha in rural populations. Moreover, by identifying the root causes of disease before modern risk factors become evident, Ayurvedic practitioners can play a vital role in preventing GDM through tailored interventions such as dietary changes and increased physical activity.

In rural and resource-constrained settings, where access to modern diagnostics may be limited, the Ayurvedic approach provides an accessible and culturally resonant method for early diagnosis and intervention. This aligns with current global health initiatives advocating for a focus on preventative care, particularly in low- and middle-income countries where the burden of GDM is rising.

Limitations of the Study:

While the study provides important insights, it is not without limitations. The relatively small sample size of 60 women, all from a single rural hospital, limits the generalizability of the findings. Additionally, while our data supports Ayurvedic perspectives on GDM, further research with larger sample sizes and in diverse populations is needed to establish a robust framework for integrating Ayurvedic diagnostics with modern medicine. Additionally, the reliance on patient-reported data for the identification of Poorvaroopa could introduce reporting bias, particularly if participants were not familiar with Ayurvedic terminology.

Conclusion: Asya Sukha, Swapna Sukha, and Dadhi are prevalent risk factors for Garbhini Prameha. Ayurvedic principles offer the potential to identify and manage this condition before the onset of more obvious risk factors recognized by modern medicine. Further studies integrating Ayurvedic and modern approaches may help reduce the socioeconomic burden of gestational diabetes.

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Conflict of Interest: Nil

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