# **Research Article**

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# Knowledge and practices of rural family physicians and obstetricians towards gestational diabetes mellitus

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#### **ABSTRACT**

**Background:** The Gestational Diabetes Mellitus (GDM) offers an important opportunity for prevention of type 2 diabetes (T2DM). The prevalence of GDM is increasing even in rural parts of India. Family Physicians (FPs) and obstetricians working in rural areas need to be well equipped to manage this disease. This study aimed at assessing the knowledge ant practices amongst these rural doctors.

**Methods:** Validated, self-completion questionnaire administered to family physicians and obstetricians after taking the written consent for participation. The questionnaire was divided in to two sections. First section was to assess the knowledge and the second section was to assess the practices adopted by participants towards GDM.

**Results:** The participants were the 18 FPs and 12 obstetricians working in rural areas and managing pregnancies. About 89% (16) of FPs and 50% (6) Obstetricians exactly knew the definition. More than 55% (10) FPs and 66.7% (8) obstetricians knew the approximate prevalence of GDM. Only 22% (4) FPs and 58.3% (7) obstetricians were practicing universal screening for GDM. Only 38.9% (7) FPs were using insulin for the treatment of GDM where as 75% (9) obstetricians using insulin. Only 17% (3) FPs and 50% (6) obstetricians were practicing at least once weekly blood glucose monitoring for GDM.

**Conclusions:** There are gap in knowledge and practices both amongst FPs and obstetricians towards the management of GDM. Future research focusing on education strategy is required which may involve novel tools like internet and mobile devices.

Keywords: GDM, Rural, Knowledge, Practices, Family physician, Obstetrician

## **INTRODUCTION**

The prevalence of type 2 diabetes is increasing across the globe. In a similar way the prevalence of Gestational Diabetes Mellitus (GDM) is also increasing. GDM is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. Women diagnosed with GDM are at increased risk of future development of Type 2 Diabetes Mellitus (T2DM) as are their children. Thus, GDM offers an important opportunity for the development, testing and implementation of clinical strategies for diabetes prevention. Family Physicians are the primary defense against the disease in rural areas. 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. Untreated GDM leads to both maternal and fetal complications.

Family Physicians (FP) and obstetricians are the doctors who take care of pregnant women. So they have an important role to play in early detection and proper management of GDM. Around 70% of Indian population lives in rural area. Appropriate infrastructure and facilities are lacking in these areas. This study was aimed

at assessing knowledge and practices of family physicians and obstetricians working in rural area about GDM. The results of this study may form the basis for developing educational strategy for these doctors.

#### **METHODS**

#### **Participants**

The participants in this study are family physicians with basic medical degree (MBBS) and doctors with post-graduation in obstetrics and gynecology referred as obstetricians.

## Survey procedure and measurements

Self-completion questionnaire was developed for this study. The questionnaire was developed by review of literature in the field and it was validated with five family physicians for scope, length, and clarity. The questionnaire consists of knowledge and practices regarding GDM and was designed to be completed in 10 minutes. Family physicians and obstetricians were met and explained about the study in detail. Questionnaire was administered after taking Informed consent.

#### Data analysis

The completed questionnaires were hand-checked for completeness and coded before data entry. As the primary aim of this study was to find out the knowledge and practices, the data was examined by simple frequency counts.

# **RESULTS**

Eighteen FPs and 12 obstetricians working in rural areas and managing pregnancies were included in the study. Out of 18 FPs 15 had more than 10 years of experience, two of them had 5 to 110 years of experience and one had one year of experience. Amongst the obstetrician group of 12 participants, 6 participants were more than 10 years of experience, 5 participants were 5 to 10 years of experience and one obstetrician had less than 5 years of experience.

#### Knowledge section of the questionnaire

About 89% (16) of FPs and 50% (6) Obstetricians exactly knew the definition of GDM. More than 55% (10) FPs and 66.7% (8) obstetricians knew the approximate prevalence of GDM. Maternal and fetal complications of GDM were recognized by 83% (15) and 89% (16) of FPs respectively. And all the obstetricians recognized the maternal and fetal complications of GDM.

## Practices section of the questionnaire

Only 22% (4) FPs and 58.3% (7) obstetricians were practicing universal screening for GDM. Majority of

them were favoring screening for high risk pregnancies only. Correct plasma glucose values for diagnosing GDM and target plasma glucose values for managing GDM were practiced by only one FP. Correct blood glucose values for diagnosing GDM were practiced by only 9% (3) obstetricians. Target blood glucose values were correctly practiced by only 33.3% (4) obstetricians. Only 38.9% (7) FPs were using insulin for the treatment of GDM where as 75% (9) obstetricians using insulin (Figure1). Only 17% (3) FPs and 50% (6) obstetricians were practicing at least once weekly blood glucose monitoring for GDM (Figure 2).

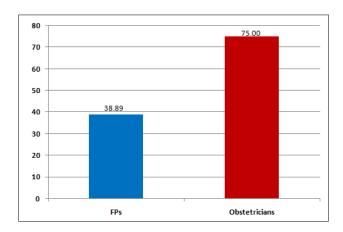


Figure 1: Percentage of doctors using Insulin in GDM.

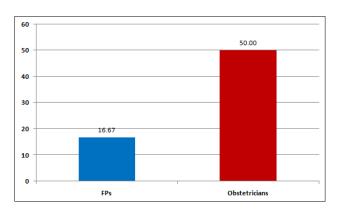


Figure 2: Percentage of doctors monitoring for at least once weekly blood glucose values.

#### **DISCUSSION**

GDM is of public health importance. Present study assessed and also compared the knowledge and practices amongst FPs and obstetricians. Many of the doctors involved in the management of GDM showed gaps in knowledge and practices about GDM. As expected, obstetricians fared better in knowledge and practicing methods practices compared to FPs. Most of the participants were aware of the definition of GDM and complications of GDM. All the obstetricians recognized almost all the common maternal and fetal complications of GDM.

Indian authorities have recommended universal screening for GDM but the same is not adopted by many doctors. This may be partly influenced by some guidelines like American Diabetes Association (ADA) still recommend risk based screening. Different screening criteria are used for diagnosing GDM in different part of the world. The correct cut-off levels for diagnosing as well as correct plasma glucose targets used by doctors varied in most of the studies. In present study also FPs performed poorly in this aspect. Past studies also have shown similar results. Past studies also have shown similar results.

Some of the studies have shown the beneficial effects of metformin and glyburide in GDM. In a study by Akincia et al., considerable number of family physicians used Oral Hypoglycemic Agents (OHAs) which have not been proved to be safe in pregnancy. In a study by Gabbe et al. about 13% of obstetricians were using OHA. In our study several FPs and a few obstetricians were using OHAs in pregnancy.

Self-Monitoring of Blood Glucose (SMBG) is practiced by very few people in rural Indian setting. Hence we considered at least once weekly testing for glucose as reasonable. Only 17% FPs and 50% obstetricians were doing at least once weekly testing for glycemic control. In study by Gabbe et al. only 60% of GDM patients under went SMBG. <sup>10</sup>

The important limitation of the study is small sample size. To our knowledge this is the first study to assess and compare knowledge and practices about GDM amongst FPs and obstetricians in rural areas in this part of the world.

## CONCLUSION

The present study demonstrates that there are major gaps in the knowledge and practicing methods amongst FPs and obstetricians towards the management of GDM. Future research focusing on education strategy to strengthen FPs and obstetricians in rural areas is required, which may involve novel tools like internet and mobile devices.

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institutional ethics committee

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