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CROSS SECTIONAL ANALYSIS OF RATE OF PRESENTATION OF PATIENTS WITH GESTATIONAL DIABETES

Nasreen Noor[1*], Atif Ahmed[2], Muhammad Suhail Baig[3], Muhammad Iqbal Shah[4], Hamid Nawaz Ali[5], Aatir H. Rajput[6] and Muhammad Muneeb[7]

[1 & 3]Liaquat University Hospital, Hyderabad
[2] Bilawal Medical College (L.U.M.H.S.), Jamshoro.
[4]Liaquat University of Medical & Health Sciences, Jamshoro
[5]Zulekha Hospital Dubai, United Arab Emirates
[6]Virtual University of Pakistan
[7]Indus Medical College, Tando Muhammad Khan

Abstract:

Background: *Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy. The definition applies whether insulin or only diet modification is used for treatment and whether or not the condition persists after pregnancy. It does not exclude the possibility that unrecognized glucose intolerance may have antedated or begun concomitantly with the pregnancy.*

Objective: *Approximately 7% of all pregnancies are complicated by GDM, resulting in more than 200,000 cases annually. The prevalence may range from 1 to 14% of all pregnancies, depending on the population studied and the diagnostic tests employed. This study hopes to investigate the rate of presentation of patients with gestational diabetes at Liaquat University Hospital, Hyderabad.*

Methodology: *This cross-sectional analysis was conducted jointly by the department of obstetrics and gynecology OBGYN and the department of medicine (unit – II) at a tertiary care hospital (Liaquat University Hospital, Hyderabad) from January 2017 to June 2017. Medical records of pre-diagnosed patients who fulfilled inclusion criteria were scrutinized and data was entered in a structured questionnaire. Data was analyzed using SPSS v. 16.0 and MS. Excel 2016.*

Results: *GDM was identified in 140 pregnancies according to the diagnostic plasma glucose thresholds. An additional 220 pregnant women were found to be in the high risk groups but did not test positive for gestational diabetes. A greater proportion of women who fell in the high risk group and also the group that tested positive belonged to urban region and fell within the age bracket of 35-45 years.*

Conclusion: *A significant number of women presenting at the study setting were at risk of developing GDM and a worrisome proportion did actually have GDM. Most at risk were middle aged women from the urban areas.*

Recommendations: *Further research needs to be conducted on a larger sample space to explore the matter in-depth. Steps too need to be taken to educate pregnant women regarding the condition.*

Key words: *Diabetes, Gestational Diabetes, Pregnancy.*

Corresponding author:

Dr. Nasreen Noor,
Senior Women Medical Officer,
Liaquat University Hospital, Hyderabad
Email: muhammadiqbalshah22@gmail.com
Phone: 0300-3034963

QR code

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INTRODUCTION:

Recent data show that gestational diabetes mellitus (GDM) prevalence has increased by an approximate 10–100% worldwide during the past 20 years. A true increase in the prevalence of GDM, aside from its adverse consequences for infants in the newborn period, might also reflect or contributes to the current patterns of increasing diabetes and obesity, especially in the offspring. Therefore, the public health aspects of increasing GDM need more attention. The frequency of GDM usually reflects the frequency of type 2 diabetes in the underlying population. [1, 2] Established risk factors for GDM are advanced maternal age, obesity, and family history of diabetes. [3] Unquestionably, there are differences in the prevalence of GDM among different ethnic, geographic, socioeconomic and other demographic groups. [4–15] In the U.S., Native Americans, Asians, Hispanics, and African-American women are at higher risk for GDM than non-Hispanic white women. [4–6, 8–11, 13–15] In Australia, GDM prevalence was found to be higher in women whose country of birth was China or India than in women whose country of birth was in Europe or Northern Africa. [7] GDM prevalence was also higher in Aboriginal women than in non-Aboriginal women. [12] In Europe, GDM has been found to be more common among Asian women than among European women. [16] The proportion of pregnancies complicated by GDM in Asian countries has been reported to be lower than the proportion observed in Asian women living in other continents. [17]

In India, GDM has been found to be more common in women living in urban areas than in women living in rural areas. [18] The trend toward older maternal age [19], the epidemic of obesity [20] and diabetes [21], and the decrease in physical activity [22] and the adoption of modern lifestyles in developing countries [23] may all contribute to an increase in the prevalence of GDM. Because GDM is associated with several perinatal complications [3], and because women with GDM and their offspring are also at increased risk of developing diabetes later in life [3], it is critical to assess trends in GDM prevalence to allocate appropriate resources to perinatal management and postpartum diabetes prevention strategies. Characterizing trends in GDM might also help to understand possible mechanisms for the increase of obesity and type 2 diabetes, especially in children. Recent data [7, 11– 15] show that GDM prevalence has increased by greater than 16–127% in several race/ethnicity groups during the past 20 years. These variations may depend on differences in methodology and study populations across studies. Methodological issues are described below as well as studies of trends in GDM. Some studies [7, 11] calculated the "cumulative incidence" (defined as the percentage of pregnancies in which GDM was recognized) because GDM frequency was calculated among screened pregnancies regardless of whether they delivered an infant. However, most of the studies [12–14, 15] identified only women who delivered, and therefore they calculated the "prevalence" of GDM at delivery.

This study hopes to investigate the rate of presentation of patients with gestational diabetes at Liaquat University Hospital, Hyderabad.

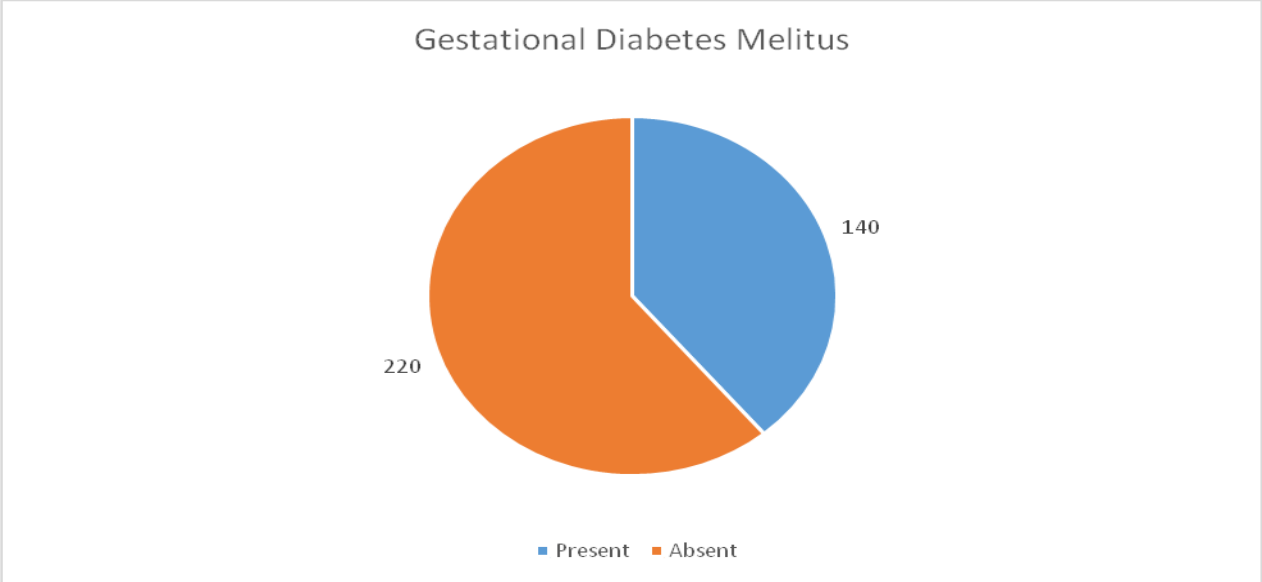
MATERIAL AND METHODS:

This cross-sectional analysis was conducted jointly by the department of obstetrics and gynecology OBGYN and the department of medicine (unit – II) at a tertiary care hospital (Liaquat University Hospital, Hyderabad) from January 2017 to June 2017. The patients were assessed at the first prenatal visit for clinical characteristics consistent with a high risk of GDM (marked obesity, personal history of GDM, glycosuria, or a strong family history of diabetes) and the selected subjects were referred to the medical department and made to undergo glucose testing as soon as feasible.

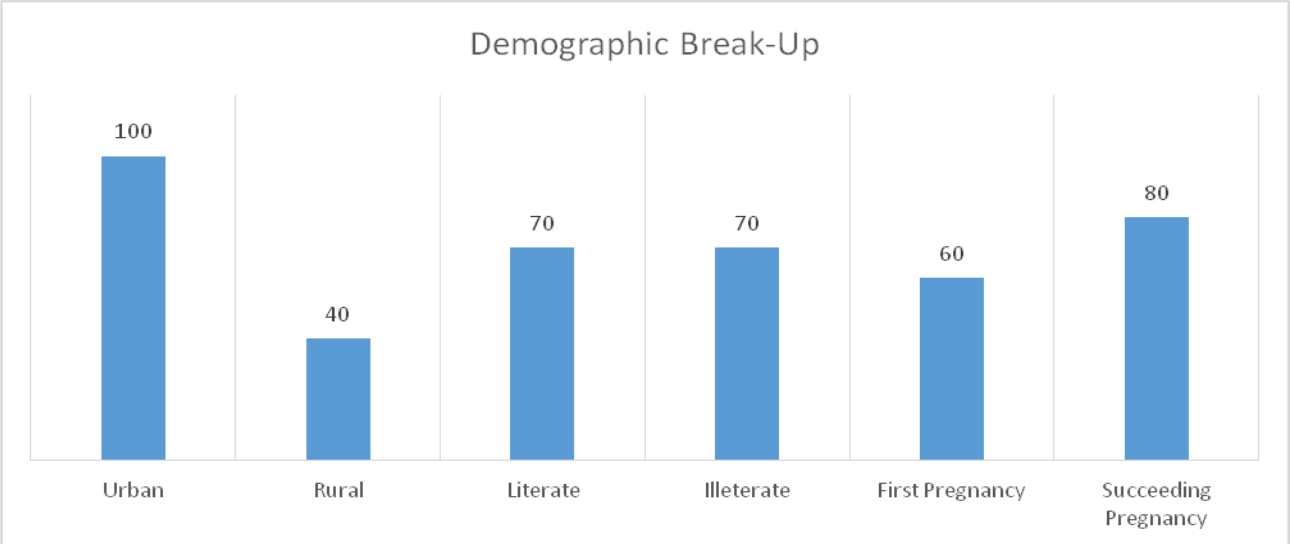
If they are found not to have GDM at that initial screening, they were retested between 24 and 28 weeks of gestation. Low-risk status women who met the following characteristics were excluded from the sample. Age (25 years), weight before pregnancy (normal), no known diabetes in first-degree relatives, no history of abnormal glucose tolerance, no history of poor obstetric outcome. A fasting plasma glucose level greater than 126 mg/dl (7.0 mmol/l) or a casual plasma glucose greater than 200mg/dl (11.1mmol/l) were considered to meet the threshold for the diagnosis of diabetes. Positive tested subjects were made to undergo a one-step approach where we performed a diagnostic oral glucose tolerance test (OGTT) without prior plasma or serum glucose screening.

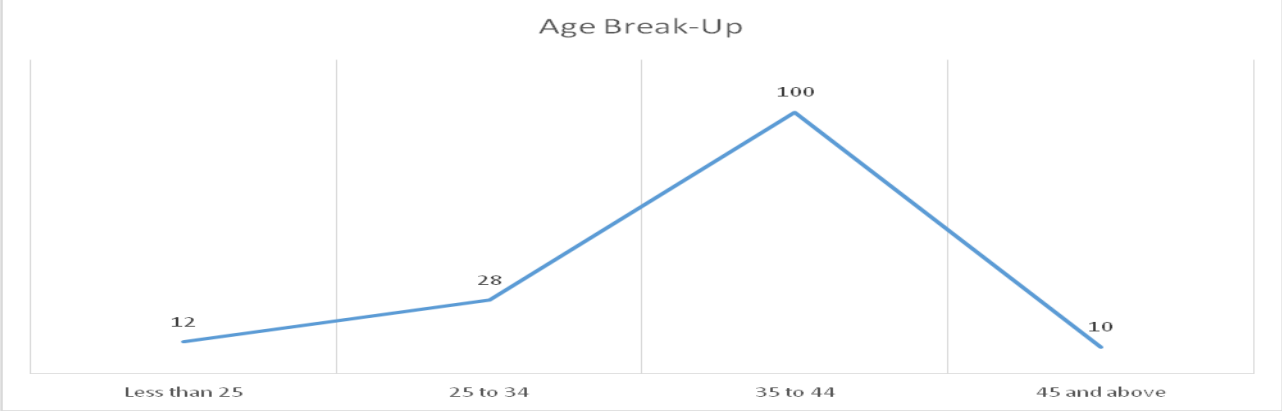
RESULTS:

GDM was identified in 140 pregnancies according to the diagnostic plasma glucose thresholds. An additional 220 pregnant women were found to be in the high risk groups but did not test positive for gestational diabetes.



A greater proportion of women who fell in the high risk group and also the group that tested positive belonged to urban region and fell within the age bracket of 35-4 years.





DISCUSSION:

Whatever the underlying reason for the observed increases in the prevalence of GDM, the health care system is faced with an increase in GDM. Therefore, this pregnancy complication will require increased resources to manage appropriate glycemic control during pregnancy and reduce adverse perinatal outcomes. [24] In addition, greater than 50% of women with GDM are expected to develop type 2 diabetes within 5 years of the index pregnancy. [25] Recent clinical trials have shown that health behaviors such as diet and physical activity prevent or delay the onset of diabetes. [26, 27] Such behavioral interventions have been shown to be cost-effective at a higher level than a pharmacological intervention. [28] Therefore, clinicians will increasingly have to promote plasma glucose testing and improved health behaviors at postpartum visits of women who had GDM to prevent development of diabetes and recurrent GDM. However, discontinuities in health care may lead to inadequate postpartum follow-up and care. Women with GDM are diagnosed by an obstetrician during pregnancy but often are referred to the primary care provider after delivery. Also, some physicians may not recognize that women with GDM are at risk of diabetes. As reported in a survey conducted in 1998, only 62% of the American College of Obstetrics and Gynecology members believed that women with GDM were at increased risk of diabetes. [14]

Probably more evidence on the efficacy of postpartum behavioral intervention in preventing diabetes in women with GDM is needed to increase the awareness of physicians about the importance of counseling GDM women about their risk of diabetes and behavioral changes. [29] In addition, GDM may play a crucial role in the increasing prevalence of diabetes and obesity. Infants of women with GDM or diabetes are at increased risk of developing obesity, impaired glucose tolerance, and diabetes as children or young adults [30–32], and the increased risk may be independent of genetic factors [33]. In conclusion, a true increase in the prevalence of GDM, aside from its adverse consequences for infants in the newborn period, might reflect or contribute to the ongoing pattern of increasing diabetes and obesity. The possible long-term effects of the increase in GDM on the immediate offspring will not be known for decades. Access to healthcare and quality care for GDM women and their offspring need to be more widely available. Therefore, coordinated efforts are required to alter these trends in GDM and to prevent chronic diabetes in GDM patients and their offspring.

CONCLUSION:

A significant number of women presenting at the study setting were at risk of developing GDM and a worrisome proportion did actually have GDM. Most at risk were middle aged women from the urban areas.

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