

DEFINING SCREENING PRACTICES FOR GESTATIONAL DIABETES  
MELLITUS AT A LARGE, URBAN INDIAN COMMUNITY HOSPITAL

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INTRODUCTION

GDM and Prevalence

- GDM is defined as a glucose intolerance of varying severity with onset or first recognition during pregnancy
- Indian women have an 11-fold increased risk of developing GDM compared to women from other countries
- Current screening guidelines for GDM advocate using an oral glucose challenge test in all high-risk women

Significance of GDM

- Complications of pregnancy due to GDM include abortion, preterm labor, polyhydramnios, and fetal deaths
- Complications to the fetus include fetal macrosomia, fetal malnutrition, defects of the neural tube, and cardiac anomalies such as ventricular septal defects and atrial septal defects proving the need for a consistent and reliable screening process

GDM In India

- In India, a glucose challenge test to diagnose GDM is complicated by many barriers
  - Cost or lack of reliable transportation
  - Women are unaware of the fasting requirement prior to undergoing a glucose challenge test
  - Inconsistent prenatal care
  - Women with limited income unable or unwilling to pay for a glucose challenge test
  - With these major barriers to the diagnosis of GDM, more convenient and low-cost methods are used to diagnose GDM

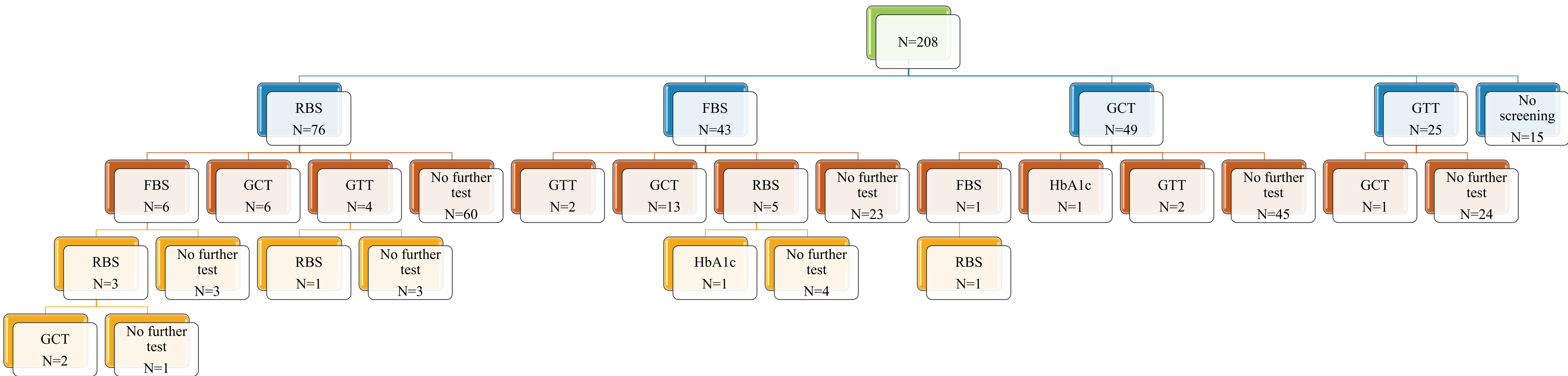
The aim of this project was to outline screening practices for gestational diabetes mellitus (GDM) at an urban Indian community hospital in south India (Apollo General Hospital in Hyderabad, India) to understand if GDM was being reliably diagnosed.

METHODS

To understand if GDM was being accurately diagnosed, a chart review of all consecutive deliveries at Apollo General Hospital in Hyderabad, India was completed

- Timeframe: hospital opening, in 2012, to 2016
- Information collected: hospital’s screening practices for GDM including procedures, results, follow-up practices, patient’s demographic information, medical history, follow up during pregnancy, and pregnancy outcomes including maternal pregnancy and delivery complications and fetal complications

GDM Screening at Apollo General Hospital in Hyderabad, India



**Figure:** current GDM screening algorithm by type of test used. RBS: random blood sugar, FBS: fasting blood sugar, GCT: glucose challenge test, GTT: glucose tolerance test, HbA1c: hemoglobin A1c test

RESULTS

- GDM screening rates were high, 92%, but not universal
- No unified protocol for GDM screening exists at Apollo General Hospital in Hyderabad, India
- The following tests were used as first line screening tools:
  - Random blood sugar (RBS): 36%
  - Fasting blood sugar (FBS): 21%
  - Glucose challenge test (GCT) - one hour 75 g glucose: 23%
  - Glucose tolerance test (GTT) - two hours 100 g glucose: 12%
  - No screening: 8%
- A second screening test with used in 27% of patients with the most frequently used test being a GCT
- 10 out of 208 patients or 4.8% were diagnosed with GDM
- 6 out of the 10 patients with GDM were diagnosed using a form of a GTT or GCT

CONCLUSIONS

- While overall, screening for GDM is high at Apollo General Hospital, the screening algorithm varies considerably with no one test consistently administered to all patients
- Only about 50% of women that came to Apollo received an oral glucose challenge test during their pregnancy: the gold standard of screening for GDM
- A significant proportion of patients had more than one screening test
  - This less intensive approach to screening may actually be more burdensome on both the patient and the healthcare system than expected
- Of concern is the high use of FBS as a screening tool for GDM
  - FBS is a very low sensitive method to detect GDM and therefore is potentially under diagnosing patients
  - This conclusion is partially supported by the low prevalence of GDM (4.8%) found at Apollo General Hospital, where, based on the demographics of the population, the prevalence would be expected to be higher than the world prevalence of 6%
- Future recommendations to improve GDM screening at Apollo General Hospital include:
  - Explore patient and provider factors that influence the choice of testing
  - Design and test a provider educational program
  - Design and test a system wide standardized protocol
  - Design and test a patient education program