P-0967 High prevalence of gestational diabetes mellitus (GDM) in early pregnancy in Asian Indians – the STRiDE study

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BACKGROUND

- Though screening for gestational diabetes mellitus (GDM) at first trimester has been recommended, it is typically diagnosed around 24–28 weeks of gestation. However, it is important to identify hyperglycaemia as early in pregnancy as possible, especially pregestational diabetes.
- While there is consensus on the cut-points of glucose for diagnosing pregestational diabetes, there is considerable debate on the cut-points for diagnosing GDM in the first trimester.
- Both prevalence data and effectiveness of managing GDM in the first trimester are lacking.

AIM

- The aim of this study was to look at the prevalence of GDM in the first trimester using the International Association of the Diabetes and Pregnancy Study Groups (IADPSG) criteria among Asian Indian women.

METHOD

- ST**ratification of **R**isk of **D**iabetes in **E**arly pregnancy (STRiDE) project runs in five antenatal clinics in Chennai and one in Hyderabad.
- Sample size: n=978 (recruitment – ongoing)
- Inclusion criteria: All pregnant women between 18 to 50 years of age and less than 16 weeks of gestation were included in the study.
- Exclusion criteria: Those with known Type 1 or Type 2 diabetes, women on metformin therapy (up to 6 weeks before) for anovulation and/or infertility, women with any serious medical illness.
- Fasting plasma glucose (FPG) estimations was carried out (by hexokinase/kinetic method) in all eligible women.

Definition:

- GDM was diagnosed using IADPSG criteria of FPG ≥ 92 mg/dl (≥ 5.1 mmol/L) and < 126 mg/dl (7.0 mmol/L) and pregestational diabetes, if FPG ≥ 126 mg/dl (≥ 7.0 mmol/L).

Statistics:

- Data was analyzed using SPSS version 20.0. Descriptive statistics and Student's 't' test was used for continuous variables. Frequency distribution and chi square tests were used for categorical variables.

RESULTS

Comparison of the baseline characteristics of pregnant women with and without GDM in first trimester of pregnancy

Parameters	Women without GDM	Women with GDM	p value
n	829	146	
Age (years)	27.2 ± 4.1	27.7 ± 4.4	0.166
Gestation age (weeks)	11.3 ± 2.8	10.4 ± 2.8	0.001
Weight (kg)	62.1 ± 11.9	66.8 ± 12.9	<0.001
Body mass index (kg/m ²)	25.2 ± 4.4	26.7 ± 4.8	<0.001
Waist circumference (cm)	87.9 ± 10.2	91.9 ± 9.6	<0.001
Percent body fat (%)	36.6 ± 7.1	38.7 ± 6.5	0.001
Systolic blood pressure (mmHg)	102 ± 10	106 ± 10	<0.001
Diastolic blood pressure (mmHg)	68 ± 8	71 ± 9	<0.001
Triceps skinfold (mm)	26.5 ± 5.9	28.6 ± 6.3	<0.001
Subscapular skinfold (mm)	26.8 ± 6.0	28.9 ± 5.6	<0.001
Previous history of GDM (%)	7.1%	16.8%	<0.001
Family history of GDM (%)	6.0%	4.0%	0.357
Family history of DM (%)	50.6%	55.0%	0.220
Fasting plasma glucose (mg/dl)	83 ± 5	97 ± 5	<0.001
Venous HbA1c (%)	5.1 ± 0.3	5.3 ± 0.4	<0.001
Point-of-care HbA1c (%)	5.3 ± 0.5	5.4 ± 0.5	0.021

Prevalence of GDM according to BMI categories

Scatter plot comparing venous HbA1c vs point of care HbA1c

CONCLUSION

- The prevalence of GDM is high even during the first trimester, in this Asian Indian population.
- This calls for earlier screening for GDM among high-risk ethnic groups like Asian Indians. However, the benefits of treating these women are not known and need further studies.
- Given such high prevalence of GDM in early pregnancy, studies that are designed to address these questions are urgently needed.