

16<sup>th</sup> Global

## Diabetes Conference &amp; Medicare Expo

March 22-23, 2017 Rome, Italy

**Associations between vitamin D deficiency, diet and physical activity; and the development of gestational diabetes mellitus in Emirati women****Sharifa Ali Abdulrahman Hashem**  
United Arab Emirates University, UAE

**Background:** Gestational diabetes (GDM) affects 8-25% of Emirati women and its prevalence is progressively increasing in this population. Concurrently, vitamin D deficiency is a common problem among pregnant Emirati women. Existing literature suggests that vitamin D deficiency increases the risk of GDM. Despite high burden of both vitamin D deficiency and GDM among women, few studies have examined the relationship between these two health issues in the UAE.

**Objectives:** The primary objective is to investigate the association between vitamin D deficiency and the development of GDM. The secondary objective is to assess major risk factors for GDM such as diet and physical activity.

**Methods:** A prospective cohort study was conducted on Emirati women (n=563) aged 18-45 years, who were free of GDM at baseline and underwent maternal serum screening in eight primary healthcare centers in Ras Al Khaimah, UAE. Data on demographics, physical activity (global physical activity questionnaire), diet intake (food frequency questionnaire), anthropometrics and blood pressure were collected at baseline. Also, blood samples were drawn at baseline to measure the fasting blood glucose and the 25 (OH) D levels. GDM was screened by using the fasting and the 75 g 2 hour postprandial oral glucose tolerance test (OGTT) at follow up between 24th and 28th weeks of gestation. The diagnosis of GDM was done according to the American Diabetes Association (ADA) where the participant is diagnosed with the GDM if the fasting blood glucose is  $\geq 5.3$  mmol/l or the 2-h postprandial blood glucose is  $\geq 8.6$  mmol. Vitamin D deficiency was diagnosed by using the radioimmunoassay kits from immunodiagnostic systems Cobas e-411 from Roche Company USA, in Obaidallah and Saqer Hospitals laboratories according to the NIH and NHS criteria (deficiency if 25 (OH) D < 50 nmol/l = 20 ng/ml).

**Results:** Overall, 58% and 26% of pregnant women had vitamin D deficiency and insufficiency, respectively as per NIH and NHS criteria. The incidence of GDM was 15.2% as (81) women developed GDM according to ADA criteria. Among women who had vitamin D deficiency, 16% developed GDM as compared to 14% in those who had no vitamin D deficiency but this difference was not statistically significant ( $p=0.527$ ). The adjusted odds ratio (aOR) for developing GDM was 1.27 (95% [CI]: 0.74-2.18,  $p=0.37$ ) in vitamin D deficient women versus non-deficient women. The adjusted odds ratio of GDM for sitting time (time the participant spent daily sitting without doing any work to examine the physical activity) was 1.04 (95% CI: 0.92-1.16,  $p=0.50$ ). The adjusted odds ratio of GDM was significant in those who ate red meat daily (OR: 6.54, 95% CI: 1.53-27.82,  $p=0.011$ ). No significant difference in the odds ratio of GDM was observed with respect to other diets. Family history of diabetes and obesity were significant risk factors for the development of GDM (OR: 1.9, 95% CI: 1.04-3.51,  $p=0.03$ ) and (OR: 2.62, 95% CI: 1.36-5.06,  $p=0.004$ ), respectively.

**Conclusion:** In this cohort study, there was no statistically significant association between vitamin D deficiency in early pregnancy and the development of GDM. These findings are consistent with the majority of previous studies in the region and abroad.

**Biography**

Sharifa Ali Abdulrahman Hashem is a Senior Medical Technician in the Health Education department, Ras Al-Khaimah Medical District, Ministry of Health (UAE). Currently, she is pursuing her PhD in the Public Health department, College of Medicine and Health Sciences, United Arab Emirates University (UAE). She is the member of the United Arab Emirates Nutrition Committee and has completed her MSc in Health Care Administration.

sharifa\_ali\_hashem@hotmail.com

**Notes:**