

Incidence of Gestational Diabetes Mellitus in the United Arab Emirates; Comparison of Six Diagnostic Criteria: The Mutaba'ah Study

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Abstract

Background

There is currently a global epidemic of gestational diabetes mellitus (GDM) with 1 in 6 pregnancies affected worldwide. Women diagnosed with GDM have poor outcomes in their pregnancy, delivery and later in life, as do their children. Hence, it is of utmost importance to accurately screen and diagnose the disease and manage it accordingly. For more than five decades, there has been much research and controversies on how to accurately screen for and diagnose GDM. There is a paucity of such research in the UAE. Lack of a uniform GDM diagnostic criteria results in the inability to accurately combine or compare the disease burden worldwide and locally. Our study aimed to compare the incidence of GDM in the Emirati population in UAE using six diagnostic criteria for GDM.

Methods

For this analysis, we included singleton pregnancies from the Mutaba'ah Study cohort screened with the oral glucose tolerance test (OGTT) at 24-32 weeks from May 2017 to March 2021. We excluded known diabetics and newly diagnosed diabetics. GDM cumulative incidence was determined using six commonly used criteria in the UAE (IADPSG, WHO 1999, NICE 2015, ADIPS 1998, EASD 1996, and NZSSD 2004 criteria). Agreements among the six criteria were assessed using kappa statistics.

Results

2,546 women were included with a mean (\pm SD) age of 30.5 \pm 6.0 years. Mean (\pm SD) gravidity was 3.5 \pm 2.1 and mean (\pm SD) body mass index (BMI) at booking was 27.7 \pm 5.6 kg/m². GDM incidence as diagnosed by any of the six criteria collectively was 27.1%. It ranged from 8.4% according to EASD 1996 criteria to 21.5% according to NICE 2015 criteria. The two most inclusive criteria were the NICE 2015 and the IADPSG criteria with GDM incidences of 21.5% (95% CI 19.9, 23.1) and 21.3% (95% CI 19.8, 23.0), respectively. Agreement between the two criteria was moderate ($k = 0.66$; $p < 0.001$). The least inclusive was the EASD 1996 criteria [8.4% (95% CI 7.3, 9.6)]. The locally recommended IADPSG/WHO 2013 criteria had weak to moderate agreement with the other criteria, with Cohen's kappa coefficient ranging from ($k = 0.51$; $p < 0.001$) to ($k = 0.71$; $p < 0.001$).

Conclusions

Among the six GDM criteria assessed, NICE 2015 and IADPSG were the most inclusive. There were discrepancies among the six diagnostic criteria in identifying GDM cases. This emphasizes the need to unify GDM diagnostic criteria in this UAE population to provide accurate and reliable incidence estimates for healthcare planning, especially since the agreement with the recommended criteria was not optimal. Our study also serves as a foundation for further research on improving GDM care in the UAE, and ultimately maternal and child health which is in line with the health goals of Sustainable Development and UAE's National Agenda.

Keywords: gestational diabetes mellitus, GDM, incidence, diagnostic criteria, United Arab Emirates