

Commentary on: Diabetes in Pregnancy: A Comparison of Guidelines

Muneera Ahmed AlKhalifa¹, Gulmeen Raza², Rehab Ismael², Samina Anwar², Shereen Sultan², Rawan Elhennawy², Husain Ahmadi², Mahmoud Samy Ismail^{2*}

¹King Hamad University Hospital (KHUH), Kingdom of Bahrain

²Department of Obstetrics and Gynecology, King Hamad University Hospital (KHUH), Kingdom of Bahrain

Keywords: Diabetes in pregnancy; GDM screening; Gestational diabetes mellitus; IADPSG; Pre-gestational diabetes mellitus

***Corresponding author:** Ismail MS, Department of Obstetrics and Gynecology, King Hamad University Hospital, Building 2435, Road 2835, Block 228, Busaiten P.O Box 24343, Al Muharraq, Kingdom of Bahrain, Tel: +97335593048, E-mail: samyismael@hotmail.com

Received Date: January 04, 2022

Accepted Date: January 21, 2022

Published Date: January 26, 2022

Citation: AlKhalifa MA, Raza G, Ismael R, Anwar S, Sultan S, et al. (2022) Commentary on: Diabetes in Pregnancy: A Comparison of Guidelines. J Diab Meta Syndro 5: 015.

Copyright: © 2022 Alkhalifa MA, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abbreviations

ACOG: American College of Obstetrics and Gynecology

ADA: American Diabetes Association

CDA: Canadian Diabetes Association

GDM: Gestational Diabetes Mellitus

IADPSG: International Association of Diabetes and Pregnancy Study Groups

KHUH: King Hamad University Hospital

NICE: National Institute for Health and Care Excellence

PED: Pre-Existing Diabetes

SOGC: Society of Obstetricians and Gynaecologists of Canada

Gestational Diabetes Mellitus (GDM) is defined as “carbohydrate intolerance resulting in hyperglycemia of variable severity with onset or first recognition during pregnancy” [1,2]. The global prevalence of GDM is 28% [3]. In Bahrain, the prevalence has increased from 7.2% in 2002 to 12.5% in 2010 [4]. A study in King Hamad University Hospital (KHUH) done in 2015 reported a prevalence of GDM at 8% [5]. A recent review article in Bahrain compares the management of GDM according to the recommendations of international guidelines to the guidelines set by KHUH, one of the main hospitals of the country [6].

GDM is quite common and the prevalence seems to increase over time. Patient education is a main priority because they need to be involved in their treatment regimen. Since diabetes is associated with both maternal and fetal complications, glucose control should be maintained to reduce those risks. On one hand, physicians refer patients to the appropriate specialist (s) and on another hand, the patient adheres to the recommendations and implements them into their lifestyle. Although treatment should be tailored to the woman’s needs and particular conditions, healthcare professionals need to follow a standard to approach such patients.

Known risk factors associated with developing GDM include obesity, family history of diabetes, previous GDM or previous macrosomia [3,5]. Those risk factors need to be identified when booking a pregnant patient to determine their risk of GDM to help guide screening. NICE and WHO only advise screening women with high risk factors [6]. Although patients with those factors are more likely to de-

velop GDM, other low-risk patients still need to be screened routinely at 24–28 weeks. Testing is performed at that time in particular because as insulin resistance increases during pregnancy, it is well-established by 24 weeks [3]. Early diagnosis can guide early management with more conservative measures such as lifestyle modifications. Besides, patients with GDM do not necessarily present with symptoms and screening needs to be done before glucose levels are difficult to control. Also, women need to understand that GDM screening is routine during pregnancy and the risks of undiagnosed GDM is greater than the risk of the anxiety associated with testing.

Interestingly, various health organizations worldwide have different methods of screening for diabetes and different diagnostic criteria. KHUH follows the diagnostic criteria by the International Association of Diabetes and Pregnancy Study Group (IADPSG) which has lower cut-off points than other organizations including American Diabetes Association (ADA), American College of Obstetrics and Gynecology (ACOG), Canadian Diabetes Association (CDA), National Institute for Health and Care Excellence (NICE) and Society of Obstetricians and Gynaecologists of Canada (SOGC) [6]. KHUH recommends a low glycemic target for patients as an attempt to minimize the risks associated with hyperglycemia. However, they do not offer recommendations on the frequency of glucose monitoring. Patients with Pre-Existing Diabetes (PED) need to be monitored more frequently than those with GDM. Monitoring blood glucose levels multiple times a day can be distressing, especially for patients diagnosed with diabetes during pregnancy. Adherence to this habit might pose a challenge for physicians to ensure patients are responding to the proposed treatment of diabetes. The role of a diabetic educator is crucial at this point because patients need not only to be told what to do but why they are asked to take such precautions.

Besides monitoring blood glucose levels, it is critical to monitor fetal wellbeing during the pregnancy. Women with GDM have a high-risk pregnancy which entails more frequent follow-ups with healthcare professionals. Some investigations that can be performed include non-stress test, amniotic fluid index and biophysical profile [6]. Undergoing those additional tests might also be stressful for a woman. These results can also reflect the woman's response to the treatment and the necessary adjustments can be made accordingly. For instance, very strict glycemic control might lead to a fetus small for gestational age while insufficient glycemic control can lead to macrosomia.

Managing women with GDM using lifestyle modifications is appropriate for 70-85% of patients [3,7]. Although metformin can be started at first but 40% of patients require additional insulin [8]. Insulin does not cross the placenta unlike oral hypoglycemic agents, including metformin and glyburide [3,7]. Starting pharmacological treatment necessitates closer attention to patients due to the risk of hypoglycemia when taking insulin or glyburide. Hence, more frequent monitoring of blood glucose levels is warranted. Although a woman might initially respond to lifestyle modifications, pharmacological treatment may be necessary to maintain appropriate blood glucose levels to reduce the associated risks of hyperglycemia. All women with GDM, regardless of the method of treatment, require extra care and support to effectively manage hyperglycemia throughout the remainder of the pregnancy. It becomes easier to manage a patient who understands their condition and what is required from them.

Anwar et al. (2019) found that 10% of deliveries were labelled as GDM when only 8% of women who delivered actually met the criteria for GDM [5]. This raises the question as to whether those women falsely labelled as having GDM experienced unwarranted anxiety when learning about this diagnosis. Also, were they subjected to unnecessary stress and medical interventions as a result of this misdiagnosis? Ensuring physicians are aware of the diagnostic criteria and are abiding by guidelines set by an institution for the management of a particular condition, frequent audits need to be performed.

When delivering patients with diabetes, one must consider the indications of induction of labor or operative delivery. Patients may be booked to deliver earlier due to macrosomia, polyhydramnios or poor glucose control [6]. Anwar et al. (2019) reported a Cesarean section rate of 25% of patients with GDM compared to 21.6% reported in King Khalid University Hospital [5,9]. In fact, Anwar et al. reported an induction of labour rate of 38% and a lower operative incidence and shorter duration of hospital stay if patients are induced beyond 39 weeks [5]. The timing of delivery is crucial and patients need to be appropriately stratified to minimize morbidity. The high operative rate may be attributed to failed induction. The method and timing of induction are fundamental at this point as well because they may have contributed to the failed induction. Delivering patients with PED sooner than those with GDM is not always indicated because one must consider the glycemic control and the associated risks of hyperglycemia on the pregnancy. Guidelines offer a general recommendation but the physician's judgement or expertise should direct treatment on a case-by-case basis.

After delivery, patients with GDM need to be screened for the possible development of type 2 diabetes [6]. Patient education regarding appropriate lifestyle modifications remains the mainstay of post-partum follow-up. The risks of GDM do not end with pregnancy. Children of mothers with diabetes during pregnancy are also prone to developing diabetes mellitus and appropriate health measures need to be taken to reduce this risk. In fact, 50% of women who developed GDM during pregnancy develop type 2 diabetes mellitus 5 years post-partum and up to 70% develop it 15-25 years later [1,7,10]. Appropriate lifestyle measures such as healthy diet, exercise and breastfeeding can possibly lower those risks and should be encouraged.

In conclusion, managing patients with diabetes in pregnancy requires a multi-disciplinary team to best serve those patients and tailor their needs. Treatment must be individualized because not all mothers respond the same way to the proposed interventions. Increasing follow-up with such patients allows healthcare professionals to monitor their progress and response to the treatment. The prevalence of GDM will continue to rise along with the rising incidence of obesity. Education about the risks of diabetes in pregnancy can serve as an incentive for women to lead a healthier lifestyle to reduce the risks of complicated pregnancies.

References

1. Caughey AB, Turrentine M (2018) ACOG Practice Bulletin No. 190: Gestational Diabetes Mellitus. *Obstet Gynecol* 131: e49-e64.
2. <https://apps.who.int/iris/handle/10665/85975>
3. Hod M, Kapur A, Sacks DA, Hadar E, Agarwal M, et al. (2015) The International Federation of Gynecology and Obstetrics (FIGO) Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care. *Int J Gynaecol Obstet* 131: S173-211.
4. Rajab KE, Issa AA, Hasan ZA, Rajab E, Jaradat AA (2012) Incidence of gestational diabetes mellitus in Bahrain from 2002 to 2010. *Int J Gynaecol Obstet* 117: 74-77.
5. Anwar S, Gulmeen, Sultan S, Amin S (2019) Prevalence of GDM in KHUH and its effect on pregnancy and neonatal outcome following IAD-PSG (the International Association of Diabetes and Pregnancy Study Group) criteria. *Professional Med J* 26: 1491-1499.
6. AlKhalifa MA, Hsu S, Raza G, Ismail MS (2021) Diabetes in pregnancy: A comparison of guidelines. *Diabetes Updates*.
7. American Diabetes Association, Management of diabetes in pregnancy: Standards of medical care in diabetes-2019. *Diabetes Care* 42: S165-S172.
8. Diabetes and pregnancy (2013) Canadian diabetes association clinical practice guidelines expert committee, Clinical practice guidelines. *Can J Diabetes* 37: S168-S183.
9. Al-Hakeem MM (2006) Pregnancy outcome of gestational diabetic mothers: Experience in a tertiary center. *J Family Community Med* 13: 55-59.
10. National Collaborating Centre for Women's and Children's Health (UK) (2015) Diabetes in Pregnancy: Management of diabetes and its complications from preconception to the postnatal period.



Henry Journal of Acupuncture & Traditional Medicine

Henry Journal of Anesthesia & Perioperative Management

Henry Journal of Aquaculture and Technical Development

Henry Journal of Cardiology & Cardiovascular Medicine

Henry Journal of Case Reports & Imaging

Henry Journal of Cell & Molecular Biology

Henry Journal of Tissue Biology & Cytology

Henry Journal of Clinical, Experimental and Cosmetic Dermatology

Henry Journal of Diabetes & Metabolic Syndrome

Henry Journal of Emergency Medicine, Trauma & Surgical Care

Henry Journal of Haematology & Hemotherapy

Henry Journal of Immunology & Immunotherapy

Henry Journal of Nanoscience, Nanomedicine & Nanobiology

Henry Journal of Nutrition & Food Science

Henry Journal of Obesity & Body Weight

Henry Journal of Cellular & Molecular Oncology

Henry Journal of Ophthalmology & Optometry

Henry Journal of Perinatology & Pediatrics

Submit Your Manuscript: <https://www.henrypublishinggroups.com/submit-manuscript/>

Henry Publishing Groups, 41341 Red Birch Dr, Aldie, VA, 20105, USA

Tel: +1 571-275-4480; E-mail: contact@henrypublishinggroups.org

<https://www.henrypublishinggroups.com/>
