

Self-Care Practices for Women with Gestational Diabetes

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Abstract

Diabetes is a demanding disease; Gestational diabetes is defined as carbohydrate intolerance of variable severity first recognized during the present pregnancy. This includes women with preexisting but previously unrecognized diabetes. Management goals of gestational diabetes include Achieve maternal near normoglycemic level to prevent adverse perinatal outcomes and provide preconception care for women with a history of GDM.

Keywords: *Gestational Diabetes; Management Approaches; Self-Monitoring*

Introduction

Diabetes is a demanding disease; Gestational diabetes is defined as carbohydrate intolerance of variable severity first recognized during the present pregnancy. This includes women with preexisting but previously unrecognized diabetes. Management goals of gestational diabetes include Achieve maternal near normoglycemic level to prevent adverse perinatal outcomes and provide preconception care for women with a history of GDM. Management Approaches of gestational diabetes include early referral to a specialist is essential and Collaborative effort among obstetrician/midwife, endocrinologist, ophthalmologist, registered dietitian, and nurse educator. Also, individualized treatment plans. The nurse, physician, and other specialized personnel collaborate in providing services for pregnant women with gestational diabetes. Nurse in perinatal setting plays a crucial role in educating the mother about Self-Monitoring of Blood Glucose in GDM and Pharmacotherapy. Also, they play an important role in medical nutrition therapy (MNT). Today, nurses are challenged to support Exercise, Physical activity, and weight management strategies. Moreover, many researches stated that a maternity nurse plays a crucial role in providing physical, psychological, emotional support and necessary information to pregnant women. They act as a technical specialist, researcher, teacher, and consultant sometimes they also play an administrative role with the pregnant total health care experiences include guiding and supporting the staff for those they are responsible. Moreover, since nurses are being in close contact with the pregnant woman and her family they have a great chance for rendering the Psychological support.

Women's Self-management of diabetes

Management of diabetes includes much more than blood sugar testing. Self-management of diabetes includes:

- Eating a healthy, nutritious diet

- Exercising regularly
- Maintaining a healthy weight
- Taking all prescribed medications as directed
- Monitoring blood pressure
- Managing cholesterol
- Ensuring good foot care
- Keeping teeth and gums healthy
- Getting an eye exam (test) done at least once a year
- Stopping smoking
- Getting regular A1C tests and understanding the results
- Visiting with the health care team regularly.

Self-monitoring of blood glucose (SMBG)

- Self-monitoring of blood glucose is sometimes called home blood sugar testing or self-testing. SMBG is a common activity for people living with diabetes and refers to when you check your blood sugar level on your own using a home blood sugar meter (sometimes called a glucometer).
- There is new and important information on SMBG. New research shows that most people with diabetes who are not using insulin do not need to test their blood sugar as often as they do now and this will not negatively affect their health.
- For people with diabetes who are not using insulin, there is very little proof that routine SMBG improves diabetes care. Many people think of blood sugar testing as the main way to manage their diabetes, but self-management of diabetes means more than just keeping track of your blood sugar levels.
- Woman should test blood sugar levels only when having a reason to test. She should also know how to interpret the results and what actions to take. In other words, you should “Test with Purpose”.
- Self-monitoring of blood glucose (SMBG) is the cornerstone of diabetes management in gestational diabetes mellitus (GDM).
- ADA guidelines for pregnant patients requiring insulin:
 - SMBG \geq 3 times daily.
 - More frequent SMBG may be required, including:
 - Morning fasting
 - Pre-meal (breakfast, lunch and dinner)

- 1-hour postprandial (breakfast, lunch and dinner)
- Before bed.



Figure 2

CGM devices: Professional versus personal

- a. Professional CGM devices:
 - Owned by a health care professional.
 - Typically implanted for 3 - 5 days.
 - Data downloaded and analyzed by a health care professional.
- b. Personal CGM devices:
 - Owned by the patient.
 - May be implanted for longer periods (e.g. several weeks).
 - Provide continuous feedback on glucose values, which may be read/interpreted by the patient in the real-time.

Medical therapy (MT)

- a. **Pharmacologic therapy**
 - When medical nutrition therapy alone fails, pharmacologic therapy is indicated:
 - AACE guidelines recommend insulin as the optimal approach.

- Insulin therapy is required for the treatment of T1DM during pregnancy.
- Metformin and the sulfonylurea glyburide are the 2 most commonly prescribed oral antihyperglycemic agents during pregnancy.
- Due to efficacy and safety concerns, the ADA does not recommend oral antihyperglycemic agents for gestational diabetes mellitus (GDM) or preexisting T2DM.

b. **Insulin use during pregnancy**

1. **Insulin**

- 3 pre-meal short-acting insulin (actrapid) +/- intermediate-acting insulin (protophane) as it allows maximum flexibility.
- Target blood glucose:
 - Fasting < 5 mmol/L.
 - 2 hr < 7 mmol/L.



Figure 1

2. **Oral hypoglycemic agents**

- Implicated as teratogenicity in animal studies especially first-generation sulfonylureas.
- In humans, scattered case reports of a congenital abnormality.

- Risk of congenital abnormality related to maternal glycemic control rather than mode of the anti-DM agents.
- For type 2 DM patients:
 - To stop oral hypoglycemic agents and change to insulin.
 - Reassure that the risk of a congenital abnormality due to drug is small.
- Biguanides (metformin).
- Cat B drug.
- Commonly used in polycystic ovarian disease (PCOD) to treat insulin resistance and normalize reproductive function.
- Not teratogenicity.
- Reduce first-trimester miscarriage.
- 10X reduce gestational diabetes.

3. Sulfonylureas

- 1st generation drug increase the risk of neonatal hypoglycemia.
- 2nd generation drug (Glyburide) no such effect and other morbidities.
- Cat C drug.
- 4% - 20% patients failed to achieve glucose control with a maximum dose of the drug.
- Increase the risk of preeclampsia and need for phototherapy.

Insulin dosing guidelines during pregnancy and postpartum

Weeks' gestation	Total daily dose (TDD) of insulin†
1 - 13 weeks	(0.7 x weight in kg) or (0.30 x weight [lbs])
14 - 26 weeks	(0.8 x weight in kg) or (0.35 x weight [lbs])
27 - 37 weeks	(0.9 x weight in kg) or (0.40 x weight [lbs])
38 weeks to delivery	(1.0 x weight in kg) or (0.45 x weight [lbs])
Postpartum (and lactation)	(0.55 x weight in kg) or (0.25 x weight [lbs])

Insulin pump therapy/continuous subcutaneous insulin infusion (CSII)

- CSII: Administration of rapid-acting insulin via an insulin pump:
 - Safe and reliable method for satisfying basal insulin needs in pregnant patients with gestational diabetes mellitus (GDM), T2DM or T1DM.

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- CSII may need to be combined with CGM for optimal glycemic control in T1DM.
- Can be used to effectively mimic physiologic insulin secretion.
- No significant difference in glycemic control for pregnancy outcomes with CSII versus multiple-dose insulin (MDI) therapy.
- Can help address daytime or nocturnal hypoglycemia or a prominent dawn phenomenon.
- Insulin Aspart and Lispro are the standard of care for CSII.
- Disadvantages of CSII:
 - Complexity-requires counseling and training.
 - Cost.
 - Potential for insulin pump failure/user error or infusion site problems [1-17].



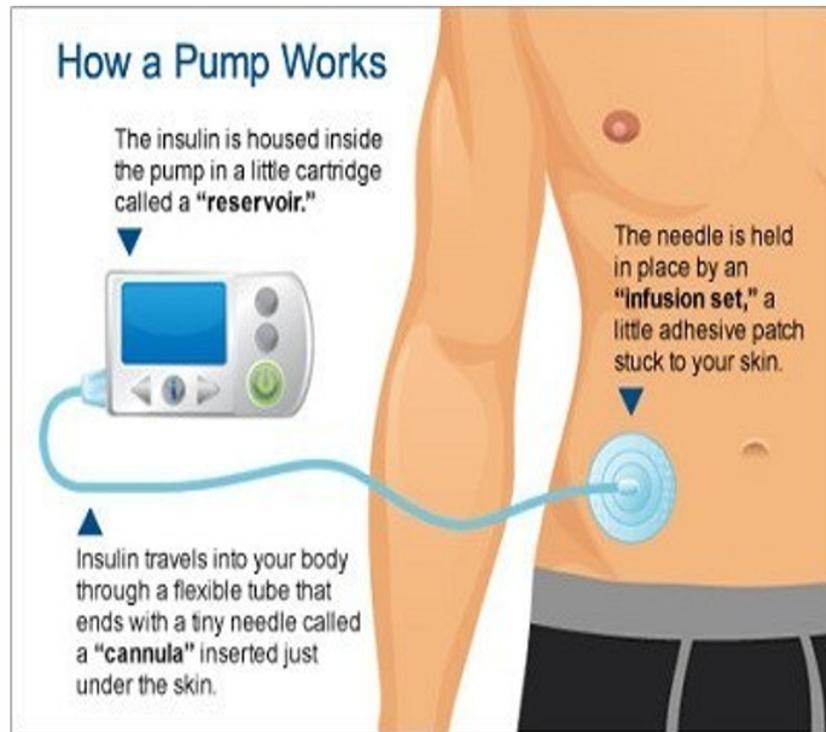


Figure 3

Conclusion

As diabetes mellitus is a demanding disease; Gestational diabetes is a crucial issue during women's pregnancy which could affect negatively on the pregnant woman and her fetus as well. This indicates the importance to learn each woman and improve her awareness about Self-Care Practices for Gestational Diabetes to pass her pregnancy safe and avoid complications for herself and her baby as well.

Bibliography

1. ADA. "Gestational diabetes mellitus". *Diabetes Care* 27.1 (2004): S88-S90.
2. Hassan H., et al. "Depression Symptoms among Diabetic Pregnant Women in Beni-Suef". *International Journal of Science and Research* 5.5 (2016): 7-12.
3. Castorino K and Jovanovic L. "Pregnancy and diabetes management: advances and controversies". *Clinical Chemistry* 57.2 (2011): 221-230.
4. Hod M and Jovanovic L. "Technology and pregnancy". *International Journal of Clinical Practice* 166 (2010): 47-52.
5. AACE. "American Association of Clinical Endocrinologists Medical Guidelines for Clinical Practice for developing a diabetes mellitus comprehensive care plan". *Endocrine Practice* 17.2 (2011): 1-53.

6. ADA. "Standards of Medical Care in Diabetes-2013". *Diabetes Care* 36.1 (2013): S11-S66.
7. Hassan H., *et al.* "Pregnant Women's Awareness, Intention and Compliance regarding Folic Acid Usage for Prevention of Neural Tube Defects According to Health Belief Model in Beni-Suef City". *Pyrex Journal of Nursing and Midwifery* 1.3 (2015): 13-26.
8. Said A. "Effect of counseling intervention on women's knowledge, practices and lifestyle of fetal well-being among Primigravida". *International Journal of Nursing Science* 6.4 (2016): 87-93.
9. Mathiesen ER., *et al.* "Pregnancy management of women with pregestational diabetes". *Endocrinology and Metabolism Clinics of North America* 40 (2011): 727-738.
10. Hassan H., *et al.* "Disparities of Prevalence and Causes of Maternal Antenatal Anxiety among Primigravida Pregnant Women in Egypt". *American Research Journal of Nursing* 3.1 (2017): 1-15.
11. Kitzmiller JL., *et al.* "Managing preexisting diabetes for pregnancy: summary of evidence and consensus recommendations for care". *Diabetes Care* 31.5 (2008): 1060-1079.
12. Hassan H. "Integrative Nursing Science in Women's Pre-conceptual Wellness". *International Journal of Health and Biological Sciences* 2.1 (2019): 17-18.
13. National Academy of Sciences, Institute of Medicine, Food and Nutrition Board, Committee on Nutritional Status in Pregnancy and Lactation, *Nutrition During Pregnancy* (2012).
14. Hassan H. "The Impact of Evidence-Based Nursing as the Foundation for Professional Maternity Nursing Practices". *Open Access Journal of Reproductive System and Sexual Disorders* 2.2 (2019): 195-197.
15. Hassan H. "Early Stage Cervical Cancer: Survivorship and Fertility preservation". *American Research Journal of Oncology* 2.1 (2020): 1-3.
16. Hassan H. "Kegels Exercises: A crucial issue during woman's lifespan". *American Research Journal of Public Health* 3.1 (2020): 1-5.
17. Chitayat L., *et al.* "Continuous glucose monitoring during pregnancy". *Diabetes Technology and Therapeutics* 11 (2009): S105-S111.

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