

Before conception, beyond completion of pregnancy: Prevention of gestational diabetes mellitus

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Gestational diabetes mellitus (GDM),¹ by definition, is a condition which is recognized during gestation, and which (ideally) should resolve after delivery. How then, can a "gestational" condition be managed before conception or after completion of pregnancy?

Levels of Prevention

In the context of diabetes care, prevention and management are two overlapping terms.² Primary prevention of diabetes is another label given to the management of pre-diabetes. Similarly, secondary prevention of diabetes and timely management of glycaemia are synonyms. Tertiary prevention of the syndrome, and management of diabetic complications refer to the same set of activities as well. GDM, as a syndrome, lends itself to all levels of management or prevention. While the bulk of intervention takes place during pregnancy, the pre-conception, post-partum and inter-conception phases represent windows of opportunity as well.

The Pre-Conception Phase

A frequently encountered scenario in South Asian pre-conception clinics is girls with a strong family history of diabetes, who put on weight after marriage, become pregnant, and then develop GDM. This is due to the synergistic effects of genetic make-up and external trigger factors. Such a situation can be prevented by pre-conception counselling.

Pre-conception care is an accepted part of obstetric management, especially in the context of pre-existing diabetes. A person with history of GDM has a 64% higher risk of developing the condition in her next pregnancy. Hence, she needs to be taken care of until she conceives again, and thereafter as well. In euglycemic women, too, pre-conception counseling is of equal importance.³ Physical activity and healthy eating practices should be encouraged pre-conception, rather than after diabetes has developed.

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The Post - Partum Phase

Management of GDM in the immediate post-partum phase (3) includes the following components

1. Screening for glycemic status
2. Managing glycaemia and other cardiovascular risk factors.

Post-partum screening is recommended in all women with GDM 6 weeks after delivery, using a 75g oral glucose tolerance test (OGTT), as laid down by the World Health Organization (WHO). This can be clubbed with other health-related milestones such as the infant's immunization, to improve follow-up rates.⁴ The OGTT should be repeated every 3 years, and annually if the results suggest a prediabetic status. Monitoring for other risk factors, e.g., dyslipidemia should be performed as required. The OGTT should also be performed prior to planning the next pregnancy. Management of metabolic parameters (glucose) and other cardiovascular risk factors (weight, smoking, physical inactivity) must continue in the post-partum period.

Lactation is an important aspect of postpartum care as well.⁵ Women should be encouraged to breast-feed, as this has undoubted maternal and infant benefits.

Inter-Conception Period

Regular follow up OGTTs are advised to women with a history of GDM during the inter conception period, and prior to planning pregnancy as well. Lifestyle modification advice should be coupled with pharmacotherapy, if appropriate. Inter-conception care should focus upon contraception, metabolic management, health promotion, as well the identification and resolution of patient related barriers to continued management.⁶

Post Conception Period

Screening in the inter-conception and pre-conception period, in women with a past history of GDM, should continue in pregnancy as well. Through international guidelines make no such recommendation, these women must be screened for GDM at their first antenatal visit,⁷ and at least once in each trimester thereafter.

Table: Barriers and solutions in post-partum/ inter-conception care of GDM.

	Barriers	Solution
Patient related	Limited awareness Limited time/ resources	<ul style="list-style-type: none"> ◆ Patient education during pregnancy, and at discharge after delivery ◆ Family support in child rearing ◆ Club postpartum follow up with visits for infant immunization
	Limited memory Limited priority Limited family support	<ul style="list-style-type: none"> ◆ Reminders by post, e-mail, SMS ◆ Patient education ◆ Community education and family counselling
Physical related	Limited awareness Limited priority	<ul style="list-style-type: none"> ◆ Regular multispecialty CMEs ◆ Time-saving/energy saving tools, eg, printed reminders ◆ Team-work approach
Society-related	Stigma of GDM/diabetes Limited awareness	<ul style="list-style-type: none"> ◆ Explain scope for prevention of diabetes ◆ Use normoglycaemic women with h/o GDM as role models ◆ Women- to -women approach
Health care system related	Limited awareness Limited resources	<ul style="list-style-type: none"> ◆ Regular multi-specialty CMEs ◆ Time saving tools ◆ Club material and paediatric visit ◆ Use economical/screening tests

Symptoms and signs of metabolic decompensation, such as sudden gain in weight, hydramnios or increase in fetal abdominal circumference must prompt screening of GDM. Iatrogenic interventions, such as antenatal corticosteroid therapy and tocolytic therapy, known to alter glucose metabolism, in women with a past history of GDM, should be accompanied by glucose monitoring.⁸

Responsibility

The pre-conception and post-partum phases present windows of opportunity for the prevention of GDM, and associated metabolic or cardiovascular abnormalities. The GDM care provider team's responsibility does not just begin with conception or end with delivery. In fact, this responsibility becomes ever greater in the post-partum and inter-conception periods. During pregnancy, the mother -to-be is motivated by concern for her unborn child.⁹ Once delivered, the neonate or infant becomes first priority for the mother, who tends to neglect her own health.

Continued focus on the woman's health in the post partum, inter-conception and pre-conception phase, becomes a collective responsibility of all health care providers. The GDM care team can certainly build the foundation for optimal care by adequate counseling of the women with GDM, and her family during and immediately after pregnancy, It can also facilitate

convenient post partum follow up by liaising with paediatrics, family planning, endocrinology and laboratory services to provide one stop care under one roof (Table). If this is done, we may actually achieve the underlying aim of a timely diagnosis of GDM: prevention of diabetes, as well as prevention of GDM itself.

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