

POST DELIVERY MANAGEMENT

Postpartum management of diabetes pregnancy

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Abstract

Diabetes mellitus has assumed the role of an epidemic. Previously considered a disease of affluent developed countries, it has become more common in developing countries. Pakistan is included among the countries with a high prevalence of diabetes. In this scenario, postpartum management of a woman with diabetes mellitus becomes more important as in this period counseling and educating a woman is essential.

Counseling includes life style modifications to prevent future risks involving all the systems of the body.

This review article discusses management of diabetes mellitus in postpartum period, guidelines for postpartum screening of women with gestational diabetes mellitus, risks involved in future life and stresses upon the need of local population based studies. Primary care providers and gynaecologists must realize the importance of postpartum screening for diabetes mellitus and provide relevant information to women as well.

Keywords: Postpartum management, Counseling.

Introduction

Pakistan ranks at number seven in the world, for the prevalence Diabetes mellitus, according to the International Diabetes Federation (IDF). Prevalence of diabetes mellitus (DM) in general population is estimated to be around 8.7%.¹ Urban areas and male population is affected far more than rural areas and women population of the country.² Nearly 90,000 people die annually due to complications of diabetes mellitus. With a rise in the incidence of diabetes in the general population, it is natural to assume an increase in figures of gestational diabetes mellitus as well. Unfortunately, no local figures

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on GDM are officially available. The unpublished data of our own unit in Civil Hospital, Karachi, where more than 1000 pregnant women were screened, has given results of 7%. This does not include pregnant women with Type 1 diabetes mellitus.

Apart from lack of infrastructure for health programmes, most of the efforts of clinical care providers is focused on the antenatal period, with little care for mother and newborn in the post natal period. For better care, post partum period provides an excellent opportunity to bring changes in life style, emphasizing on a healthy diet and exercise.

Postpartum management

Postpartum management of women on oral hypoglycaemic drugs

National Institute of Clinical Excellence (NICE) has recommended a set of guidelines for postpartum care of women with gestational diabetes.³ It is a known fact that placenta exerts diabetogenic effect, hence the requirement of insulin or hypoglycemic drugs are increased during pregnancy. After delivery, the requirement of insulin in gestational diabetes decreases immediately. It is recommended that soon after delivery, the use of hypoglycaemic drugs should be stopped, in women with gestational diabetes mellitus. Blood glucose levels need to be monitored before restarting of hypoglycaemic drugs. Women should be reminded of postpartum follow up with fasting blood glucose levels and not an oral glucose tolerance test (OGTT). Most important is to emphasize the importance of recurrence of GDM in the subsequent pregnancy. Women should also be guided for life style modifications, healthy eating habits, and optimizing glucose levels before next conception. These women can be counseled for annual fasting blood glucose levels. The importance of postnatal follow up in this group of women needs to be stressed among the care providers, in order to decrease the incidence of gestational diabetes mellitus.

Postpartum management of women with Type 1 DM

In the event of women with pre existing diabetes, and on Insulin therapy, the dose of Insulin needs to be adjusted immediately after delivery. Placenta exerts diabetogenic effects, increases insulin resistance and hence increases insulin requirement during pregnancy. With delivery of baby and placenta, this effect is removed immediately. Hence insulin requirements are also decreased in Type 1 DM postpartum. In the event of very high insulin requirement during pregnancy, it can not be reduced abruptly, and glucose levels needs to be monitored closely. Though there are no specific guidelines, but consensus opinion calls for two third decrease in dose of pre pregnancy insulin level, at the time of first post delivery meal.⁴ Or it can also be started at dose of 0.6 unit/kg/day postpartum weight.⁵ Insulin can be resumed back within 5-8 hours of vaginal delivery, and within 12 hours of cesarean delivery.⁶ Women should be informed about both signs of hyperglycaemia and hypoglycaemia. Insulin requirements post delivery are also affected by physical activity, exercise, use of certain drugs, medical conditions affecting pregnancy like preeclampsia and eclampsia. Later conditions may affect serum creatinine levels, and hence insulin clearance from the body. Women with increased serum creatinine levels at term were found to have a delayed time interval in starting insulin therapy post delivery.

Breast Feeding and Contraception

Drugs like metformin and glibenclamide can be safely prescribed for breast feeding mothers. Breast feeding needs to be encouraged, as it helps in weight loss and glucose control as well. It is important to give dietary advice to breast feeding mothers about how much increase should be brought about in the diet. The recommended increase in the dietary intake is around 500 calories per day. The women can return back to the primary care physicians for managing glycaemic control. The importance of contraception needs to be reminded in this group of women. They should also be informed about optimizing their blood glucose levels before next pregnancy in order to avoid risks for congenital malformation in the newborn. GDM may recur in the subsequent pregnancy in around 45% of women, and each time the further risk of T2DM is increased.

Postpartum Follow up

Do women return for follow up after delivery or in the postpartum period? Globally this is recognized that women show poor compliance towards post natal follow ups with reference to metabolic control. And this has been attributed to increased work load and

responsibilities. Despite clear guidelines from national bodies postpartum glucose testing by the care provider was observed in only 23%, with lowest rates observed for follow up in high risk group, in USA.⁷ Higher rates of follow up were observed in women > 35 years of age. American College of Obstetrics & Gynecology (ACOG) recommends postpartum screening of women with GDM at 6-12 weeks following delivery.⁸ Methods include fasting plasma glucose levels or 2 hour 75gm OGTT. Sensitivity of detecting impaired glucose tolerance is higher with the latter method is hence preferred by both ACOG and American Diabetes Association (ADA). If the result is found normal, these women should have blood glucose assessment at 3 yearly intervals, or more frequent in the event of abnormal results. This can be done sooner, if women having had GDM become pregnant again. Postpartum screening also prevents long term effects of foetal exposure to intrauterine diabetic environment. Whereas ACOG recommends 2 hour 75gm OGTT, NICE guidelines recommend fasting plasma glucose levels at postpartum follow up. A fasting plasma glucose level is more acceptable, compared to 2 hour OGTT, but there are chances of missing out impaired glucose tolerance. It is recommended that in women with fasting hyperglycaemia or impaired glucose tolerance, therapy should be started along with life style modifications.

There are no local guidelines for postpartum screening, though our country falls in the high risk category and has a high prevalence of GDM. Postpartum follow up is not routinely carried out in majority of medical centres and both private and public sector hospitals. There is also no local data available for care providers that how long it takes for women with GDM to become T2DM.

Importance of postpartum follow up

Is it important to have postpartum follow up? With as high as seven fold increased risk for development of T2DM in women with GDM, there is no doubt postpartum screening and follow up is important. This group of women have increased risks for cardiometabolic and cardiovascular diseases. It is estimated that one third of women with GDM will have impaired glucose tolerance or impaired fasting glucose levels at 6-12 weeks of postpartum follow up.⁹ This is the time period when a care provider can lay emphasis upon regular check ups, changes in life style and frequent monitoring of blood glucose levels. Women should be informed about increased chances of developing Type 2 Diabetes mellitus, if she does not bring about life style modifications. GDM, itself may be a diagnosis of type 2 DM. Emphasis should also be laid upon keeping serum triglycerides and cholesterol in check, to decrease the risk of developing

metabolic syndrome.¹⁰ Women should be counseled about keeping their body mass index within normal limits, in order to avoid developing T2DM. It is difficult to estimate how many women will develop T2DM after GDM in index pregnancy. This situation arises because of different diagnostic criteria used for the diagnosis of GDM in different populations and the follow up in coming years. In a study from South Indian population, where women with GDM (n=45) were followed for a mean of 5 years following index pregnancy, they were found to have 23 fold increased risk of developing T2DM in later life.¹¹ Authors found a greater risk of cardiovascular and metabolic disorder in women who had GDM. Family history of DM also played a significant role in the development of T2DM. In USA, the cumulative incidence of T2DM after GDM was estimated to range between 23%-33%, with positive family history of DM, having a significant influence.¹² In a population based French study, involving women (n=69,000) who delivered between 2007-20008, and were followed for seven years, women with GDM were compared with normoglycaemic women for cardiovascular risks. The investigators found women with GDM had increased risk for angina pectoris (aOR = 1.68 [1.29-2.20]), myocardial infarction (aOR = 1.92 [1.36-2.71]) and hypertension (aOR = 2.72 [2.58-2.88]).¹³ The investigators did not find increased risk of stroke in this group of women. A meta analysis showed that the cumulative risk for developing T2DM, after index pregnancy was increased in first five years followed by a plateau after 10 years.¹⁴

Conclusion

Postpartum management of diabetes mellitus needs to be streamlined in our population due to increasing incidence of the metabolic disorder. Important aspects of prevention include life style modifications, as exercise and a healthy diet which will also decrease cardiovascular risks, maintaining an optimum body mass index, precise contraception and emphasizing screening for diabetes mellitus especially in the females of reproductive age..

Recommendations and research agenda

It is high time that care providers including gynaecologists, diabetologists and primary care physicians agree upon a uniform guidelines for screening pregnant women for GDM. These guidelines must take into account our local circumstances and social factors. We need to have our own population based data for

prevalence and outcome of GDM. Similarly, we need to identify factors responsible for non existent postpartum follow up in our set up. At the same time, we need to devise methods to improve post natal follow up of women with GDM. All stake holders should be informed about the importance of screening in the postpartum period to avoid complications of chronic disease. Pakistan is struggling with very high incidence of DM, which is expected to increase exponentially in coming years. Care of women in this group can set an excellent example for preventive medicine.

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