Reducing the risk of type 2 diabetes mellitus in primary care after gestational diabetes

Brian McMillan\textsuperscript{1}, Reem Abdelgalil\textsuperscript{2}, Priya Madhuvrata\textsuperscript{3}, Katherine Easton\textsuperscript{4}, Caroline Mitchell\textsuperscript{2}

1. Centre for Primary Care, Suite 3, Floor 6, Williamson Building, Oxford Road, University of Manchester, M13 9PL. Tel 0161 2757656, Fax 0161 2757600
2. Academic Unit of Primary Medical Care, University of Sheffield, Samuel Fox House, Northern General Hospital, Herries Road, Sheffield, S5 7AU. Tel 0114 222 2099
3. Jessop Wing, Sheffield Teaching Hospitals Trust, Tree Root Walk, Sheffield S10 2SF. Tel 0114 2711900
4. Centre for Assistive Technology and Connected Healthcare, Rm G08, The Innovation Centre, 217 Portobello, Sheffield S1 4DP. Tel 0114 2220690

Author e-mail addresses:
Brian McMillan: brian.mcmillan@manchester.ac.uk
Reem Abdelgalil: ramabdelgalil1@sheffield.ac.uk
Priya Madhuvrata: Priya.Madhuvrata@sth.nhs.uk
Katherine Easton: k.a.easton@sheffield.ac.uk
Caroline Mitchell: c.mitchell@sheffield.ac.uk

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Introduction

Gestational diabetes (GD) is a condition characterised by glucose intolerance with its onset during pregnancy.\(^1\) Around 5% of women who give birth in England and Wales each year have either pre-existing or gestational diabetes.\(^1\) Women diagnosed with GD are over seven times more likely to develop diabetes mellitus (T2DM) than women with a normoglycaemic pregnancy.\(^2\) T2DM increases the risk of cardiovascular, renal and retinal disease\(^2\) and is associated with a reduction in life expectancy of 10 years on average. Although GD is a significant factor for the subsequent development of T2DM, primary care management is sub-optimal.\(^3\) This article therefore explores the management of women diagnosed with GD and discusses how primary care support for these women might be improved.

Screening, diagnosis and management

The National Institute for Health and Care Excellence (NICE) guidelines recommend that pregnant women should have a risk assessment for GD at their booking appointment.\(^1\) Those with any of the following risk factors should be tested for GD; previous GD, BMI above 30kg/m\(^2\), previous macrosomic baby weighing \(\geq \) 4.5 kg, family history of diabetes, or belonging to an ethnic background with a high prevalence of diabetes. In addition, HbA1c should be measured at the booking appointment to determine the level of risk for the pregnancy. NICE also recommends that if glycosuria of \(\geq 2+\) on one occasion or \(\geq 1+\) on two or more occasions is observed, further testing for GD should be considered. Testing comprises of a 2-hour 75g oral glucose tolerance test (OGTT) as soon as possible after booking and at 24-28 weeks if the results of the first OGTT are normal. A diagnosis of GD is made if a woman has either a fasting plasma glucose (FPG) of \(\geq 5.6\) mmol/litre or a 2-hour plasma glucose level of \(\geq 7.8\) mmol/litre. Women diagnosed with GD should be referred to a dietician and receive enhanced antenatal care.\(^1\) Postnatally, cessation of blood glucose-lowering therapy immediately after birth, and a blood glucose test to exclude hyperglycaemia before transferring women to community care is recommended. A FPG test 6-13 weeks postpartum is also recommended for those diagnosed with GD and an annual HbA1c test offered to those who have a negative postnatal test for diabetes. Women with GD should be provided with lifestyle advice on weight control, diet and exercise along with an explanation about the future risks of GD and the likelihood of developing T2DM.\(^1\)

GD Follow up in primary care

Whilst NICE provide clear guidance to support women with GD, there is poor follow up in primary care, with annual postpartum follow up rates in England of around 20%.\(^3\) This could in part be attributed to a lack of clarity concerning who is responsible for postnatal testing and poor communication between primary and secondary care.\(^3\) GPs are missing a critical window of opportunity postnaturally to complement and continue the work commenced in secondary care. Women previously diagnosed with GD who are at high risk of developing T2DM may also be missed by the assessment process in the UK National Diabetes Prevention Programme (NHS DPP) as risk scores do not necessarily identify a history of GD. Lifestyle interventions that encourage healthy eating and a sustained increase in physical activity
reduce the risk of developing T2DM in women with GD, with one study reporting a significant reduction in incidence of 53% and another noting a significant reduction in plasma insulin levels (-11.8 versus -3.2 in the control group). The majority of these interventions however have been costly, resource intensive, and therefore difficult to employ in the primary care setting.

What can be done?

Given the health risks posed by T2DM, it is essential that opportunities for early interventions are utilised. Follow-up may be better carried out at the 6 week postpartum check in primary care but there is a need to clarify who is responsible for this role. Suggestions to improve GD follow up also include establishing a recall register and setting up computer alerts on primary care systems. A routine weight check at the 6 week follow up should also be considered as weight loss services and lifestyle advice could be made available where appropriate.

The NHS DPP intervention involves at least 13 education and exercise sessions of one to two hours over a minimum of nine months. This may not be best suited to women who have recently given birth who will have many competing demands on their time. It has been noted that “Women in the post-natal period require flexible, longer-term approaches that accommodate their family and work commitments and new information technologies may have the potential to support this”. Patient and Public Involvement and qualitative work we have conducted echoes this statement and we suggest that a primary care based intervention which slots into the appointments these women already attend, complemented with mobile health (mHealth) technology, may be a more cost-effective approach. Such mHealth interventions offer the advantage that they are relatively low cost, can be tailored in real time to individual patients and can collect, analyse and relay data to researchers. There is growing evidence that apps encouraging self-monitoring of diet and exercise reduce waist circumference and that electronic pedometers can increase physical activity and diabetes control. One recent systematic review has noted that mHealth interventions significantly improve both physical activity and adiposity. The use of mHealth could therefore be potentially integrated into a primary care based behaviour change intervention to reduce the risk of developing T2DM in women with GD.

Conclusion

Women diagnosed with GD have an increased risk of developing T2DM but primary care provision for these women could be improved upon. Lifestyle interventions aimed at reducing the risk of developing T2DM in women who have GD should be designed to be accessible, cost-effective and take account of women’s experience and views of GD. The use of mHealth in primary care is a promising avenue that could help women diagnosed with GD become more engaged with lifestyle interventions and reduce their future risk of T2DM and its sequelae.

References


