Diabetes and pregnancy

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It is well known that diabetes is a systemic condition and, if not managed efficiently, can have a life-changing impact on the eyes, feet and kidneys. In this issue, we consider the impact of uncontrolled hyperglycaemia on other body systems and functions – from skin to bone, and from pregnancy to older age. On page 75, Roy Rasalam and Lesley Weaving discuss the practical aspects of maintaining healthy skin in people with diabetes, and Neil Gittoes and Vidhya Jahagirdar provide a clinical review of the potential complications to bone health as a result of diabetes (page 61). There is a special section on diabetes and pregnancy covering preconception care in primary care and the resources available for women with diabetes and health care professionals (starting from page 47). Finally, there is a paper by Anna Chapman and Claudia Meyer on the increased risk of falls in older people with diabetes and what can be done to lower the risk (page 69). This topic is especially pertinent with the growing ageing population seen in Australia and globally.

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One relatively new area of research in diabetes and pregnancy that has caught my eye is epigenetics – the effect of environment on genetics. Questions are being raised as to whether the maternal environment (e.g. maternal obesity, poor nutrition and hyperglycaemia) may "program" type 2 diabetes in offspring. There is some evidence that suggests that shared genetic and environmental risk, as well as developmental programming, may lead to children born to women with diabetes during pregnancy at greater risk of developing type 2 diabetes in later life (Berends and Ozanne, 2012). If the female offspring then have their own children, it is thought that an intergenerational cycle of diabetes risk could be established (Dabelea and Crume, 2011). The intricacies of this are important to understand, as many women with pre-existing type 2 diabetes are often overweight or obese. They often continue to gain weight with each additional pregnancy and are sometimes reluctant to engage with health services (Bandyopadhyay et al, 2011). Women of South East Asian origin are at particularly high risk of diabetes during pregnancy, so by developing effective strategies to specifically address these factors, the risk of future diabetes to offspring may be reduced (Greenhalgh et al, 2015).

What other considerations need to be made to avoid the increased risk of adverse pregnancy outcomes as a result of diabetes? Pre-gestational diabetes (type 1 and type 2 diabetes) is present in approximately 1% of pregnant women in Australia and the prevalence is increasing not only here, but around the world. Women with pre-existing diabetes are at high risk of complications during pregnancy, with up to four times the rate of congenital malformations, and up to a five-fold increased risk of stillbirth and perinatal mortality compared to women without diabetes. By safely optimising blood glucose management, women can significantly reduce their risk of complications, and preconception care has been shown to reduce these risks (Inkster et al, 2006).

Women of child-bearing age with diabetes need to be informed of the availability and importance of preconception care, which can be provided by both primary and specialised diabetes services; many women with type 1 diabetes access diabetes specialist services, while the majority of women with type 2 diabetes are managed in primary care. Included in preconception care is appropriate contraception advice. Here, primary care providers can make a real difference in promoting and providing appropriate contraception to women with diabetes to prevent unplanned pregnancies.

In this pregnancy special, there are three pieces related to pregnancy and diabetes. There is a CPD module outlining the requirements of preconception care for women with

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diabetes, including practical information for health care providers, as well as case studies to highlight the application of this information in clinical practice (page 54). There is also a wealth of resources for the clinician and woman with diabetes to optimise healthy pregnancy outcomes. Melinda Morrison from the National Diabetes Services Scheme and colleagues outline the resources available, such as apps, booklets and online resources (page 50). We also have the first "From the other side of the desk" feature – a new series to inform clinical care from the perspectives of people with diabetes. In the first of the series, Karen Barrett discusses her journey with diabetes and how it affected her pregnancies (page 47).

By considering the health and wellbeing of women with diabetes prior to pregnancy, and utilising the resources that have been developed specifically to support this group before, during and after pregnancy, we anticipate that meaningful improvements in pregnancy outcomes are possible. ■

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