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Preconception care for women with type 2 diabetes mellitus: A mixed-methods study of provider knowledge and practice

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ABSTRACT

Aims: Preconception care may decrease adverse pregnancy outcomes associated with pre-existing diabetes mellitus. Aboriginal Australians are at high risk of type 2 diabetes mellitus (T2DM), with earlier onset. We explored practitioner views on preconception care delivery for women with T2DM in the Northern Territory, where 31% of births are to Aboriginal women.

Methods: Mixed-methods study including cross-sectional survey of 156 health practitioners and 11 semi-structured interviews.

Results: Practitioners reported low attendance for preconception care however, 51% provided counselling on an opportunistic basis. Rural/remote practitioners were most likely to find counselling feasible. The majority (69%) utilised appropriate guidelines and addressed lifestyle modifications including smoking (81%), weight management (79%), and change medications appropriately such as ceasing ACE inhibitors (69%). Fewer (40%) prescribed the recommended dose of folate (5 mg) or felt comfortable recommending delaying pregnancy to achieve optimal preconception glucose control (42%). Themes identified as barriers to care included the complexity of care setting and infrequent preconception consultations. There was a focus on motivation of women to make informed choices about conception, including birth spacing, timing and contraception. Preconception care

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enablers included cross-cultural communication, a multi-disciplinary care team and strong client-based relationships.

Conclusions: Health practitioners are keen to provide preconception counselling and reported knowledge of evidence-based guidelines. Improvements are needed in recommending high dose folate and optimising glucose control. Cross-cultural communication and team-based care were reported as fundamental to successful preconception care in women with T2DM. Continued education and policy changes are required to support practitioners in opportunities to enhance pregnancy planning.

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1. Introduction

Pre-existing diabetes in pregnancy can result in a range of complications including significantly increased rates of miscarriage, congenital anomalies, stillbirth and macrosomia as well as longer-term complications for the mother and child [1]. These risks are increased with higher glycaemic levels [2,3]. Preconception care, specifically with the aim of optimising glycaemic control, can reduce these adverse outcomes [4–7]. This care needs to incorporate contraception and pregnancy planning whilst optimising a woman's health to improve pregnancy outcomes. In addition to routine preconception measures such as screening for infections and ensuring vaccinations are up-to-date, preconception care for women with pre-existing diabetes focuses on reducing the metabolic, teratogenic and cardiovascular risks related to pregnancy for these women. Central elements of preconception care for this group include medication review, folic acid and iodine supplementation, weight loss, smoking cessation counselling, improved nutrition and exercise, as well as addressing other diabetes-related health problems [8,9]. Facilitating an improved intra-uterine environment through improved preconception care which addresses glucose control and general health also confers long-term benefits to the future health of offspring including potential decreased risks of obesity and diabetes [10,11].

The prevalence of diabetes in Aboriginal Australians is increasing, particularly in women and in remote areas with onset at an earlier age than in non-Aboriginal people [12]. While pre-existing diabetes currently affects less than 1% of Australian pregnancies, rates of type 2 diabetes mellitus (T2DM) among Aboriginal women in pregnancy are 10 times higher than those in non-Aboriginal women [13]. Preconception care is thus an important opportunity to optimise the woman's health, as well as that of her baby.

Aboriginal mothers account for 31% of births within the Northern Territory (NT) of Australia, and the majority live in rural or remote locations [14]. High rates of diabetes and the challenges of providing primary and specialist care in remote locations over vast distances pose unique challenges to the care of women with pre-existing diabetes in this context. Challenges are further increased by the significant socio-economic disadvantage experienced by Aboriginal Australians [15]. Aboriginal women tend to present later in pregnancy for care than other Australian women [16,17], rates of

folic acid use are considerably lower than national averages [18] and Aboriginal mothers self-report higher cigarette and alcohol consumption during pregnancy [14]. Intervention in the preconception period therefore has the potential for significant maternal and child health gains.

Research across Australia and internationally has established that there are low rates of preconception care among women with T2DM [3,19,20]. A recent cross-sectional survey of healthcare professionals within the NT Diabetes In Pregnancy (DIP) Partnership highlighted that few women with T2DM are seen for preconception counselling [21].

In the context of high rates of pre-existing T2DM and low practitioner rates of reported preconception care [21], we undertook a mixed-methods study of practitioners providing preconception care to women with T2DM, aiming to identify:

1. Knowledge about and elements and practice of preconception care in the context of existing guidelines.
2. Practitioners' experiences of undertaking preconception care, including limitations and barriers.

2. Methods

The National Health and Medical Research Council (NHMRC) funded NT DIP Partnership was established to address diabetes in pregnancy in the particularly high risk populations of this region [22]. The Partnership has three arms: (i) the establishment of the NT DIP Clinical register; (ii) improving models of care for mothers experiencing hyperglycaemia in pregnancy; and (iii) a longitudinal observational research study [22]. This research is a component of the models of care arm of this Partnership.

2.1. Health practitioner survey

A cross-sectional survey was designed for health practitioners based in all regions of the NT caring for women with pre-existing T2DM during their pregnancy and/or preconception. The survey was electronically distributed via a web-based site (using Survey Monkey) from October 2014 to March 2015. The survey was also distributed in hard copy to attendees at the Baker IDI Chronic Diseases Symposium in Alice Springs on 23rd–24th October 2014. All disciplines of health-care practitioners were eligible to participate.

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