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Welcome to ANZJOG Virtual Edition about Diabetes in Pregnancy

We are pleased to present a collection of research and review papers about diabetes in pregnancy, published 2018 to 2019 with work originating in Australia and New Zealand, of relevance to many high-income countries.

Four papers inform readers about recent trends in maternal obesity, gestational and pre-gestational diabetes and macrosomia in the region [1-4]. Two studies highlight challenges which rural women and their maternity care-givers face [1, 4]. A paper about lifestyle intervention in a rural centre gives cause for optimism [5].

Folic acid supplementation and optimal glycaemic control peri-conceptually are vitally important for women living with diabetes as congenital anomaly remains a cause of perinatal mortality in this group [6]. Engaging all women who live with diabetes in pre-pregnancy care has many benefits [4].

Diabetes in pregnancy frequently occurs along with other health problems. Articles in this edition review problems faced by women with pre-pregnancy diabetes [4], associations of disordered sleep, gestational diabetes and other maternal health problems in twin pregnancy [7] and a novel cohort study finds risperidone, clozapine and higher-dose quetiapine associated with increased risk of gestational diabetes which persists after controlling for other recognised risk factors [8].

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Readers who already use or who are thinking of requesting glycosylated haemoglobin (HbA1c) tests will be interested in three papers which add more information about how to use this test for screening for diabetes during and after pregnancy [9-11].

Diagnostic criteria from International Association of Diabetes in Pregnancy Study (IADIPS) [12] have largely superseded Australasian Diabetes in Pregnancy Society (ADIPS) criteria [13, 14] in many settings. While IADIPS diagnostic criteria are now very widely adopted, a paper in this edition shows that management of GDM remains heterogeneous across Australian units [15].

Another study found that pregnancy outcomes in eras before and after changed diagnostic criteria were generally good, a possible increase in infants born small for gestational age could be a safety signal [14]. This is particularly important as fetal growth restriction is associated with stillbirth in pregnancies complicated by diabetes [6] just as in pregnancies without diabetes. While GDM can be associated with lower perinatal mortality than reported in non-diabetic pregnancies [16], women with Type 1 and 2 diabetes continue to bear a disproportionate burden of perinatal mortality [4].

Concerning prediction of GDM, three papers confirm that this is possible to some degree by maternal characteristics [17], early gestation fasting hyperglycaemia [11] or 2nd trimester adiponectin [18].

It remains unclear how important is detection of 1st or 2nd trimester hyperglycaemia (often called early GDM or eGDM), compared with routine GDM detection and management in the 3rd trimester. Martin's group suggests that eGDM predicts subsequent maternal insulin use [11] but another study found equivalent perinatal outcomes whether GDM was diagnosed before or after 20 weeks [19]. The extent to which mild hyperglycaemia is truly pathological at early gestation before there is a predictable fetal pancreatic response remains uncertain. Clinical benefit or harm of early OGTT testing and treatment would be best answered by a controlled trial of similar design to landmark studies which established the benefit of testing and treating GDM in the third trimester [20, 21].

Readers focusing on birth mode and timing for women with diabetes in pregnancy will find several papers of interest in this edition. Zeki's study looks at the important problem of obstetric anal sphincter injury and its association with birth mode with or without episiotomy for women with gestational diabetes [22]. Another study reports an increasing trend to early- term labour induction for women with GDM with associated high rates of neonatal unit admission but good short-term newborn health [23]. Concerning intrapartum Caesarean section, maternal diabetes and late pregnancy biometry were associated with intrapartum CS as determined by retrospective modelling but whether this will be useful prospectively remains to be seen [24].

What are the benefits and risks to the baby of maternal antenatal corticosteroids (ACS), specifically for Caesarean birth at term where pregnancy is complicated by diabetes? This question has been addressed by a pilot, case-control study about women with GDM in New Zealand [25]. Control women received standard care and were matched 1: 1 with case women who received betamethasone, and closely monitored dextrose and insulin infusions. Matched characteristics were whether CS was preceded by labour (10%) or not (90%), ethnicity, and year of delivery. There were no obvious differences in maternal age, HbA1c, gestational age or infant birthweight. Case infants seemed to benefit from reduced admission rates to the neonatal unit for respiratory support: 3% compared with 20% but had higher rates of hypoglycaemia (defined as true blood glucose ≤ 2.5 mmol/L) of 36% compared with 30% [25]. The authors called for a prospective, randomised controlled trial (RCT) to better explain if steroid treatment, rather than unidentified confounders, explain the observed differences in neonatal outcomes.

Similar outcomes have been seen in infants born to women with pre-existing diabetes who are exposed to ACS [26]. It is hoped that RCT evidence will become available to guide clinical practice.

We hope you enjoy reading, find some answers to your questions and some questions for future research.

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