

3 MEDICAL DISORDERS ASSOCIATED WITH PREGNANCY

3.1 DIABETES IN PREGNANCY

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3.1.9 Pregnant women with diabetes requiring insulin or oral hypoglycaemic agents management

Section B

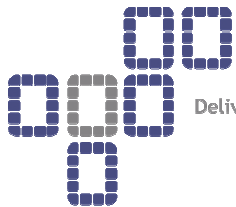
Clinical Guidelines

King Edward Memorial Hospital

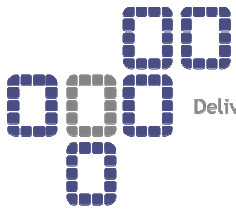
Perth Western Australia

3.1.9 PREGNANT WOMEN WITH DIABETES REQUIRING INSULIN OR ORAL HYPOGLYCAEMIC AGENTS (OHA'S) - MANAGEMENT

Management Guidelines		Rationale
Education	Refer to Diabetes Educator for instruction on diabetes, management plan, risk factors, blood glucose monitoring & insulin administration.	Ensures understanding of GDM and its implications and helps reduce anxiety. Will encourage compliance with treatment recommendations and BGL monitoring.
Diet	Refer to Dietitian. Recommend: <ul style="list-style-type: none"> • 5 – 6 low fat low GI meals/day • Snacks and supper are important • Ensure nutritional adequacy • Energy restricted diet for obese women (BMI >30). 	Nutritional education is the main treatment strategy for BGL control. This is best received from a dietitian who is able to individualise nutritional requirements to maintain optimum BGLs.
BGL	Aim for BGL of: <ul style="list-style-type: none"> • <5.5 mmol/L fasting level. • <7.0 mmol/L 2 hour postprandial level. 	Control of BGLs significantly reduces rates of : <ul style="list-style-type: none"> • fetal anomalies and macrosomia • maternal hypo/ hyperglycaemia • neonatal hypoglycaemia
HbA_{1c}	Measure at first visit & each trimester, women may benefit from extra tests	The HbA _{1c} level is a useful guide to the reliability of self monitored BGLs.
OHA's	In women resistant to large doses of insulin, OHA's may be considered, but such treatment remains experimental and should be prescribed only by the Diabetes Physician	Experience with the use of selected OHA's in pregnancy is growing. OHA's are undergoing investigation in randomized control trials
Exercise	Recommend 30 minutes of moderate exercise each day (e.g. swim / walk) provided no medical / obstetric contraindications.	Exercise is a useful adjunct to dietary therapy in BGL control, maintaining general wellbeing and decreasing long-term complications.
Insulin	Consult with Diabetes Physician if BGLs greater than goals	Avoid fetal macrosomia and complications during the delivery



Management Guidelines		Rationale	
Fetal surveillance	<i>Ultrasonography</i> <ul style="list-style-type: none"> First Trimester Screen 	11 ⁺⁶ –13 ⁺⁶ weeks	Includes gestational age, nuchal fold translucency and blood test: HCG, PAPP-A (10 – 13+6weeks) Blood test is sensitive if performed earlier rather than later approx. 2 weeks prior to USS
	<ul style="list-style-type: none"> Anatomy 	18-22 weeks	To assess whether structural anomalies are present.
	<ul style="list-style-type: none"> Consider baseline growth scan 	24 weeks	If history of pre-existing vascular or renal disease, hypertension, previous pre eclampsia, thrombophilia or stillbirth
	<ul style="list-style-type: none"> Serial USS for Growth, AFI, and umbilical artery Doppler 	28*weeks 32*weeks 34 weeks 36-37 weeks * omit for GDM diagnosed > 26wks	To detect irregularities in: <ul style="list-style-type: none"> fetal growth amniotic fluid index (e.g. polyhydramnios) Fetal AC measurement at 34 weeks is strongly correlated with birth weight. ¹ <i>Consider increased fetal 'wellbeing' scans if glycaemic control is poor or reduction in insulin requirements</i>
	<i>Cardiotocograph (CTG)</i> After 34 weeks, consider 2-3 x week CTG if poor glycaemic control, reduction in insulin requirements, hypertension, renal disease, IUGR or fetal cardiomegaly		Commencement of CTG monitoring is determined by the degree of maternal vascular disease, renal involvement, glucose control and fetal growth on serial ultrasounds.
Betamethasone	The Diabetes Physician should be notified if steroids are considered necessary for enhancing fetal lung maturity. A BGL profile for 48-72 hours should be performed post steroids. BGL >10 seek advice from the Physician.		Significant changes in insulin requirements often follow Betamethasone administration. Insulin adjustment may be required from 6 hours post 1 st dose until 72 hours after last dose.



Management Guidelines		Rationale
Maternal surveillance	Ophthalmology Review (Pre existing diabetes)	Review pre or early pregnancy to obtain a baseline and enable monitoring of the influence pregnancy has on the retina.
	Thyroid Function Test (TFT)	Women with diabetes are at a higher risk of abnormal thyroid function
	Spot urine – PC Ratio at booking, consider repeating if blood pressure elevated (PC Ratio- Protein:Creatinine ratio)	Review pre or early pregnancy to monitor the influence pregnancy has on the renal system and track any changes. This is also a predictor of pre eclampsia.
	Baseline assessments of maternal vasculopathy	
	Insulin adjustment: The woman should have 1 - 2 weekly contact with a member of the team, by phone or in person.	This will assist in BGL control and enhance awareness for both the woman and the team members.
Mode of Birth	Consider elective Caesarean Section if: <ul style="list-style-type: none"> • estimated fetal weight >4250g or • fetal abdominal circumference is >40mm than head circumference 	To reduce the risk of shoulder dystocia
Timing of Birth	Arrange an elective birth at 38-39 weeks for women requiring insulin or OHA's (or earlier as indicated by clinical situation)	To reduce the rate of fetal macrosomia and birth injury.

REFERENCE:

1.Taylor R, et al. 2002. Clinical outcomes of pregnancy in women with Type 1 diabetes. Obstetrics and Gynecology 99:537-541.