Gestational Diabetes

- 1. GestationalDiabetes Presented by: Dr. Neville M.G & Dr. Jonas L.F (O&G Housemen SGH) Supervisor: Dr Muniswaran Ganeshan (MRCOG, M MED O&G)
- 2. ? Gestational diabetes is carbohydrate intolerance of variable severity, with onset or first recognition of hyperglycaemia during pregnancy.? Gestational diabetes is a condition in which women without previously diagnosed diabetes exhibit high blood glucose levels during pregnancy (especially during third trimester).
- 3. Introduction• Represents most common metabolic complication during pregnancy; early manifestation of type 2 diabetes• Studies have shown that gestational hyperglycaemia is associated with highe incidence of adverse maternal and fetal outcomes than is seen in normal pregnancy• High proportion (>50%) have GDM in the subsequent pregnancy• Increased risk of subsequent T2DM - approx. 50 % of women with GDM progressed to DM within 5 years duration - 35 to 60% of women develop T2DM within 10 years after being diagnosed w GDM.
- 4. PATHOPHYSIOLOGY? Early in pregnancy, maternal estrogen and progesterone increase and promote pancreatic ß-cell hyperplasia and increased insulin release? As pregnancy progresses, increased levels of human placental lactogen, cortisol, prolactin, progesterone, and estrogen lead to insulin resistance in peripheral tissues.? Table 1 describes the diabetogenic potency and time of peak effect of these hormones. The timing of these hormonal events is important in regard to scheduling testing for GDM Hormone Peak elevation (weeks) Diabetogenic potency Prolactin 10 Weak Estradiol 26 Very weak HPL 26 Moderate Cortisol 26 Very strong Progesterone 32 Strong Adapted from Jovanovic-Peterson L, Peterson C: Review of gestational diabetes mellitus and low-calorie diet and physical exercise as therapy. Diabetes Metab Rev 12:287-308, 1996.
- 5. ? GDM results when there is delayed or insufficient insulin secretion in the presence of increasing peripheral resistance
- 6. Risk factors (WHO/NICE)Patients were considered to be risk-factor positive if any of the following is present:? age 35 years and above? previous macrosomic baby with birth weight 4.0kg or more? previous unexplained still birth? previous baby with congenital abnormally? previous pregnancy with gestational diabetes mellitus? history of Diabetes Mellitus in first degree relatives? Obese or pre-pregnancy weight more than 80kg, BMI > 30? Ethnicity
- 7. ? In the public health service in Malaysia, screening for gestational diabetes is done selectively where only patients with risk factors are screened and diagnosed using a 1-step 75g OGTT.? This is done at least once at or around 24-28 weeks gestation, unless there are indications for it to be done earlier.? However, as Asian ethnicity is considered a risk factor, selectively screening our women without regard to their Asian background may results in gross under-detection of gestational diabetes (~50%)? On the other hand, to have all pregnant women undergo the 75g OGTT may be cumbersome and have some economic implications, particularly in low resource areas.
- 8. Effects on Pregnant Women? Pre-eclampsia? Polyhydramnios? Operative delivery in pregnancies complicated with GDM/length of hospital stay, risks of infection.? significant risk of developing diabetes later in life? higher triglycerides,free fatty acids,and lower

high-density level (HDL) cholesterol. (cardiovascular risk)

- 9. Effects on Fetus• increased rate of stillbirths in untreated GDM• increased risk of macrosomia (fetal weight >90th percentile for gestational age or >4 kg)• fetal hyperinsulinemia and subsequently increase fetal growth• shoulder dystocia is increased 2-6X; brachial plexus injury• Neonatal hypoglycemia. In severe case, intravenous (IV) glucose solution may needed or else the baby will suffer brain damage
- 10. ? Respiratory distress symptom? Neonatal jaundice/hyperbilirubinemiaLong Term Outcome:? IGT in adolescent children? By 8 years of age, 50% of children of diabetic mothers had weights above the 90th percentile compared to children of women without diabetes? high incidence of obesity? neurodevelopmental course- child's poorer performance on standard measures of psychomotor development at 6 and 9 years of age.
- 11. How to Diagnose GDM? FBS??? RBS??? Glucosuria??? MOGTT??
- 12. ? ANSWER:MOGTTSo how's it done??Screening for GDM is performed with a 75-g oral glucose load given between 24 and 28 weeks gestation, with venous plasma glucose level taken pre and 2 hours post. The screening test is performed at a time when the diabetogenic effects of pregnancy are peaking.
- 13. WHO HAPO ADA IADPSGFasting 7.0 5.1 5.3 5.12 hours 7.8 8.5 8.6 8.5notes One abnormal Two abnormal One abnormal value required value required value required
- 14. HAPO STUDY:? This was an international multicentre observation study in which over 23,000 pregnant women were assessed for glucose intolerance using the 75 g OGTT. The results remained blinded, providing fasting glucose