DIABETIS IN PREGNANCY

Introduction

- Discuss in groups.
    - Define diabetes mellitus in pregnancy.
    - Differentiate hypoglycemia from hyperglycemia
    - Identify and explain the four main classification of diabetes
    - State ways of diagnosing DM in pregnancy
  - Effecst of DMin pregnancy
  - Effects of diabetes on the fetus

Management

- Discuss in groups and give feedback in class.
- Preconception care
- Antenatal care
- Intrapartum care
- Postparum care
- Neonatal care

Definition

- A group of metabolic disorders resulting in *hyperglycemia*
- consequence of either inadequate insulin *production*, *secretion,* or both.
- It affects the normal metabolism of carbohydrates, fat and proteins.
- The classical signs are, excessive thirst, excessive urination and unexplained weight loss.
- Normal fasting blood sugar is less that 6.1 mmol/L

Effect of diabetes on pregnancy:

- Risks of pre-gestational diabetes to the baby
- Poorly controlled pre-gestational diabetes poses a number of risks to the baby.
- These risks can be reduced with good blood sugar control starting before pregnancy.

They include the following:

1. *Birth defects:* heart defects,neural tube defects(NTDs), defects of brain/spinal cord

Cont…

- *Miscarriage*
- *Preterm labour* before 37 completed weeks
- *Premature babies* -longterm disabilities
- *Macrosomia*: large baby10pounds or more

cont

- The foetus produces *extra insulin* which helps process sugar & stored as fat.
- The fat accumulates on shoulders & trunk
- Makes it difficult to deliver vaginally
- risk of injuries

✓brachial plexus trauma

✓ shoulder dystocia

✓ fractures during delivery.

Cont…

- *Stillbirth*: raredue to poorly controlled sugars

✓ *Newborn complications*: These include

✓respiratory distress syndrome

✓Hypoglycaemia

✓Polycythaemia

✓ neonatal hypocalcaemia

✓neonatal jaundice.

Effects of diabetes mellitus on the mother

- Women with diabetes pre-gestational & gestational will have an uncomplicated prg
- healthy baby, as long as blood sugar levels are well controlled.
- risk of certain pregnancy complications

✓Diabetic retinopathy

✓ Chronic hypertension

✓Renal dysfunction

✓Preeclampsia

✓Polyhydramnios

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- ✓Increased operative deliveries
- ✓Abruptio placentae
- ✓ Maternal stroke
- ✓HELLP syndrome
- ✓Maternal mortality

Effect of pregnancy on diabetes

- Deterioration of glucose tolerance during prg
- resistance increases with gestational age.
- retinopathy worsen in prg.
- Gestational diabetes only occurs in pregnancy.
- Diagnosis is by glucose tolerance testing

Diagnosis of gestational diabetes mellitus

- Risk assessment for GDM undertaken first

  prenatal visit
- Women with risk factors, should have a glucose tolerance test (GTT) as soon as feasible.
- retest btn 24 & 28 wks gestation.
- FBS > 7.8 mmol/l /RBS>11.1 mmol/l, meets criteria for diabetes if confirmed on a subsequent day.
- Symptoms of diabetes polyuria, polydypsia, and/or unexplained weight loss & FBS *> 7.8 mmol/l*
- should raise suspicion of gestational diabetes.

Cont…

- Glucosuria is a common finding in prg due to increased glomerular filtration
- unreliable means of diagnosis.

Pre-conception care

- good glycaemic control before conception reduce the risk of

✓ miscarriage

✓ congenital malformation

✓ stillbirth

✓neonatal death

✓ It is important to explain that risks can be reduced but not eliminated

Cont…

- avoid unplanned pregnancy is an essential component.
- Women with diabetes should be offered pre-conception care & advice before discontinuing contraception.

Information & advice include

- The role of diet, body weight and exercise
- The risks of hypoglycaemia & hypoglycaemia unawareness in prg
- How nausea and vomiting in pregnancy can affect glycaemic control
- The increased risk of having a baby who is large for gestational age
- increases likelihood of *birth trauma*, *induction of labor* & c/s

Cont…

- assessment of diabetic *retinopath*y & diabetic *nephropathy* before/during prg
- importance of maternal glycaemic control during labor & birth
- early feeding of the baby to reduce risk of *neonatal hypoglycaemia*
- transient morbidity in baby during the neonatal period
- risk of baby developing obesity/diabetes in later life.

Cont…

- folic acid supplements 5 mg/day from pre-conception until *12 weeks* gestation
- Rvw medication,glycaemic targets and self-monitoring
- Frequency of appointments and local support, including emergency telephone numbers/contacts.

Investigations

- Blood glucose
- Ketone testing

Antenatal care

- Before/soon as pregnancy is confirmed:stop oral hypoglycaemic agents, apart from metformin
- aim FBS 3.5-5.9 mmol/l
- urine culture & treat infections(uti)
- Protein detected in clean-catch urine should be evaluated by 24hrs

Cont…

- If edema occurs attention to glucose control (e.g. returning to daily monitoring)
- bed rest
- Routine ultrasound
- Routine NST from 32 weeks
- Daily assessment of fetal heart rate/movement.
- During prg suspected ketoacidosis should be admitted immediately for critical care
- receive both medical and obstetric care

Cont…

- Preterm labour is increased in patients with diabetes
- treat with mgsulphate
- Corticosteroids increase maternal glucose so keep levels in the desired range.
- Induction of labour at 38 wks in patients with poor glucose control & macrosomia.
- Use of Prostaglandin to ripen the cervix reduces the caesarean section rate

Cont…

- Tailor hypoglycaemic therapy to individual woman
- Regular insulin, the rapid acting insulin analogues
- metformin and glibenclamide may be considered
- The pt should be managed jointly by the diabetes and antenatal clinic team.
- Maintain contact with the diabetes care team every 1–2 weeks to assess glycaemic control

Management of Labour

- advised to deliver in hospital under skilled birth attendance.
- Insulin-dependent diabetics should be induced at 40 wks if labour has not occurred.
- Continuous foetal heart rate monitoring is required with careful attention to decelerations.
- Glucose infusion (D5W, lactated Ringer’s solution) is given to all patients in labour

Cont…

- Glucose levels are monitored every 2-4 hours goal 3-7 mmol/L till delivery.
- Maintain regular insulin (25 iu/250 mL normal saline, dilute 0.1 iu/mL)
- continuous infusion at levels of 0.5-2 iu/h.
- *Shoulder dystocia* should always be anticipated

Neonatal care

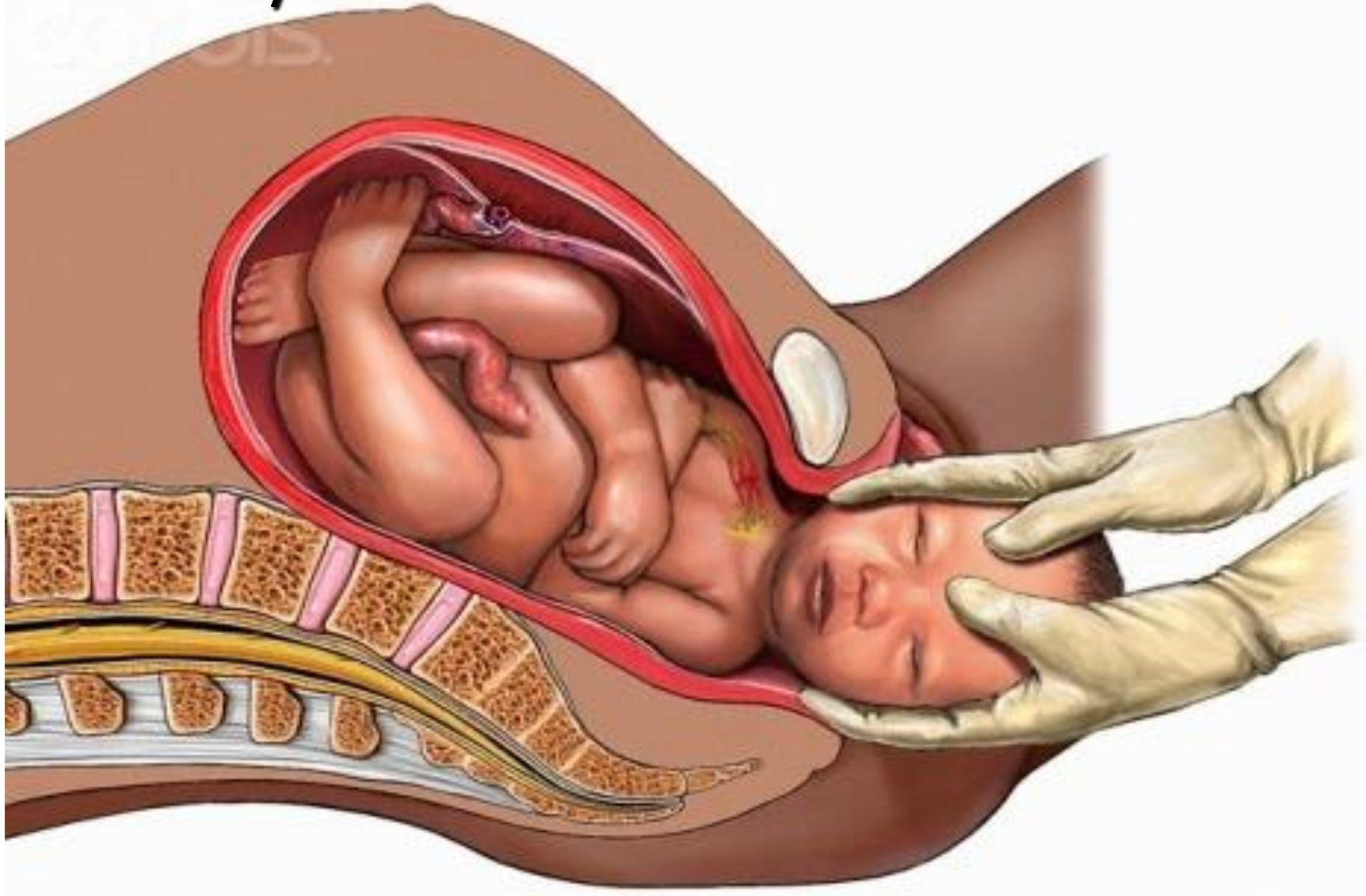
- should be kept with their mothers unless there is a clinical complication
- Observe hypoglycaemia,Respiratory Distress Syndrome RDS & neonatal jaundice.
- Breastfeeding is not affected by diabetes

Postnatal care

- offer lifestyle advice (including weight control, diet and exercise)
- FBS at 6wk PN
- Offer contraception

Fetal macrosomia

Shoulder dystocia



Obstetric complications

- Preterm delivery
- Intrauterine fetal demise
- Traumatic delivery (e.g., shoulder dystocia)
- Operative vaginal delivery
  - vacuum-assisted
  - forceps-assisted

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- Fetal macrosomia
  - Disproportionate amount of adipose tissue concentrated around shoulders and chest
- Respiratory distress syndrome
- Neonatal metabolic abnormalities:
  - Hypoglycemia
  - Hyperbilirubinemia/jaundice
  - Organomegaly
  - Polycythemia
- Perinatal mortality
- Long term predisposition to childhood obesity and metabolic syndrome

summary

- Definition
- Preconception care
- Labour mgt
- complications

End

- Questions , comments, clarifications.

Evaluation of the lesson

- One minute in paper please write down
- What was the most important thing you learnt during this class?
  - What important question remains unanswered?
  - Any recommendations?