NEET SS

OBSTETRICS+ PART 2

OBSTETRIC, MEDICAL & SURGICAL COMPLICATIONS

22

Diabetes in Pregnancy: I

★ 4.4 | 80 Min

23

Diabetes in Pregnancy : II

★ 4.5 | 39 Min

24

Hypertensive Disorders of Pregnancy: I

★ 4.5 | 94 Min

25

Hypertensive Disorders of Pregnancy: II

★ 4.6 | 93 Min

26

Hypertensive Disorders of Pregnancy: III

★ 4.7 | 77 Min

27

Pregnancy after Previous CS

★ 4.5 | 27 Min

28

Anemia in Pregnancy

★ 4.4 | 69 Min

29

Antepartum Hemorrhage

★ 4.5 | 59 Min

30

Postpartum Haemorrhage

★ 4.5 | 99 Min

31

Fetal Growth Restriction

★ 4.4 | 53 Min

32

Preterm Labour & PROM

★ 4.6 | 90 Min

33

Heart Disease in Pregnancy : I

★ 4.4 | 104 Min | NEW

34

Heart Disease in Pregnancy: II

★ 4.4 | 33 Min | NEW

35

Connective Tissue Disorders in Pregnancy

★ 4.5 | 52 Min

36

Neurological Disorders in Pregnancy

★ 4.5 | 45 Min

37

GI & Liver Disorders in Pregnancy

★ 4.4 | 86 Min

38

Multifetal Gestation: I

★ 4.5 | 46 Min

39

Multifetal Gestation: II

★ 4.4 | 44 Min

40

Sexually Transmitted Diseases

★ 4.3 | 45 Min

41
PRO

Infections In Pregnancy

4.4 | 70 Min

42
PRO

HIV In Pregnancy

4.5 | 46 Min

43
PRO

Thromboembolic Disorders & Thromboprophylaxis in Pregnancy

4.4 | 70 Min

44
PRO

Skin Disorders in Pregnancy

4.5 | 47 Min

45
PRO

Obesity in Pregnancy

4.5 | 32 Min

46
PRO

Maternal Sepsis During & Following Pregnancy

4.4 | 48 Min

NEWBORN

47
PRO

The Normal Newborn

4.5 | 30 Min

48
PRO

Complications of Term Neonate

4.5 | 44 Min

49
PRO

Complications of Preterm Neonate

4.4 | 16 Min

Stillbirth

DIABETES IN PREGNANCY : I

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Introduction

00:00:26

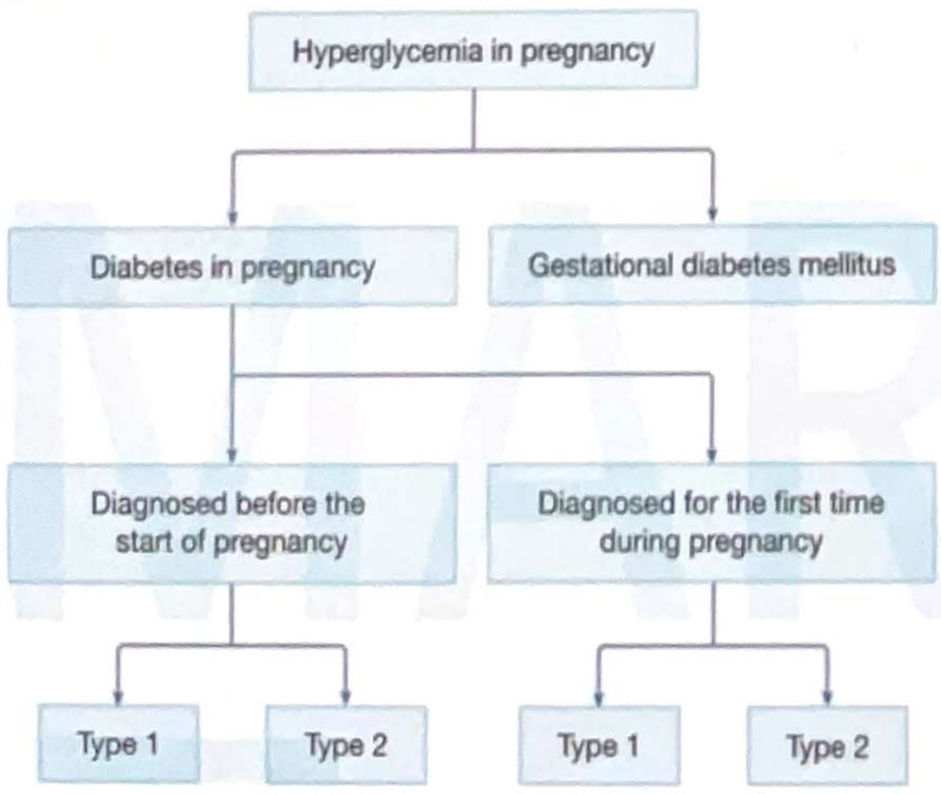
Overview :

- Diabetes in pregnancy : Carbohydrate intolerance of variable severity during pregnancy.
- 2 types : Diagnosed before pregnancy or diagnosed for the first time during pregnancy.

Classifications :

- Older classification : Priscilla White.
- Simplest classification : Overt and gestational diabetes.
- 2015 FIGO classification : Hyperglycemia in pregnancy.
  - Type 1 : Absolute insulin deficiency
  - Type 2 : Insulin resistance of variable degree.
- Overt diabetes : Diagnosed before pregnancy, risk factor for congenital abnormalities
- Gestational diabetes : Diagnosed in 2nd or 3rd trimester but never in first trimester.
  - Pregnancy is inherently diabetogenic : D/t hPL (Human placental lactogen).
  - Gestational diabetes mellitus (GDM) : Does not ↑ the risk of any congenital anomalies.

Types of Hyperglycemia in Pregnancy



Diabetes in pregnancy

Pregnancy in previously known diabetes

OR
Hyperglycemia diagnosed for the first time during pregnancy that meets WHO criterion for diabetes mellitus in the nonpregnant state

May occur anytime during pregnancy including the first trimester

Gestational diabetes mellitus

Hyperglycemia during pregnancy that is not diabetes

Hyperglycemia diagnosed for the first time during pregnancy

May occur anytime during pregnancy but most likely after 24 weeks

Feedback

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Modified White Classification Scheme :

Used from 1986 to 1994 for diabetes complicating pregnancy.

Class	Onset	Fasting plasma glucose level	2-hour postprandial plasma glucose level	Therapy
A1	Gestational	<105 mg/dL	<120 mg/dL	Diet
A2	Gestational	>105 mg/dL	>120 mg/dL	Insulin

Class	Onset age (Years)	Duration (Years)	Vascular disease	Therapy
B	Over 20	<10	None	Insulin
C	10 to 19	10 to 19	None	Insulin
D	Before 10	>20	Benign retinopathy	Insulin
F	Any	Any	Nephropathy*	Insulin
R	Any	Any	Proliferative retinopathy	Insulin
H	Any	Any	Heart	Insulin

* When diagnosed during pregnancy : Proteinuria ≥500 mg/24 hr before 20 weeks' gestation

Pathophysiology :

Maternal :

- Pregnancy is a diabetogenic state d/t increased hormones :
  - Estrogen.
  - Progesterone.
  - Testosterone.
  - Growth hormone.
  - Cortisol.
  - Insulinase.
  - hPL.
- Fasting hypoglycemia and postprandial hyperglycemia.
- Increased glucose intake and increased insulin production.
- But increased insulin resistance occurs : maximum in third trimester.

Fetal :

- Maternal hyperglycemia → Facilitated diffusion of glucose across the GLUT-1 receptors → Crosses the placenta and reaches the fetus.
- Hyperglycemia in fetus :
  - Hypertrophy of beta cells in pancreas.
  - Increased growth → macrosomia; all organs ↑ growth except brain.
  - Increased fat deposition → Shoulder dystocia during delivery.
  - Increased erythropoietin → Polycythemia.

Feedback

- Decreased surfactant → RDS.

----- Active space -----

Screening & diagnosis

00:08:30

Criteria :

- ACOG.
- WHO/FIGO.
- Indian guideline : DIPSI.

ACOG criteria :

Screening : GCT (Glucose challenge test).

- Fasting is not necessary.
- 50g oral glucose given and blood sugar value checked after 2 hours.
- If >140mg/dl : Patient undergoes diagnostic test, OGTT.

Diagnostic : OGTT.

- 8 hours of fasting.
- 100g oral glucose given to the patient.
- Blood sugars checked at : Fasting, 1 hour, 2 hours and 3 hours.

Criteria	Fasting	1 hour	2 hours	3 hours
Carpenter-Coustan	95	180	155	140
National diabetes data group	105	190	165	145

- If more than 2 values are deranged : Diagnosed as GDM.

WHO/ FIGO criteria :

- Test performed at 24 to 28 weeks.
- Fasting for 8 hours (Overnight).
- 75g glucose given :

Fasting	1 hour	2 hours
92	180	153

- If one value is deranged it is diagnostic of GDM.

Indian guidelines :

DIPSI : Diabetes in pregnancy study group; 2014.

- Formulated based on the fact that India is a low resource developing country : Involves lesser values, less preparation for the female and early diagnosis.

Feedback

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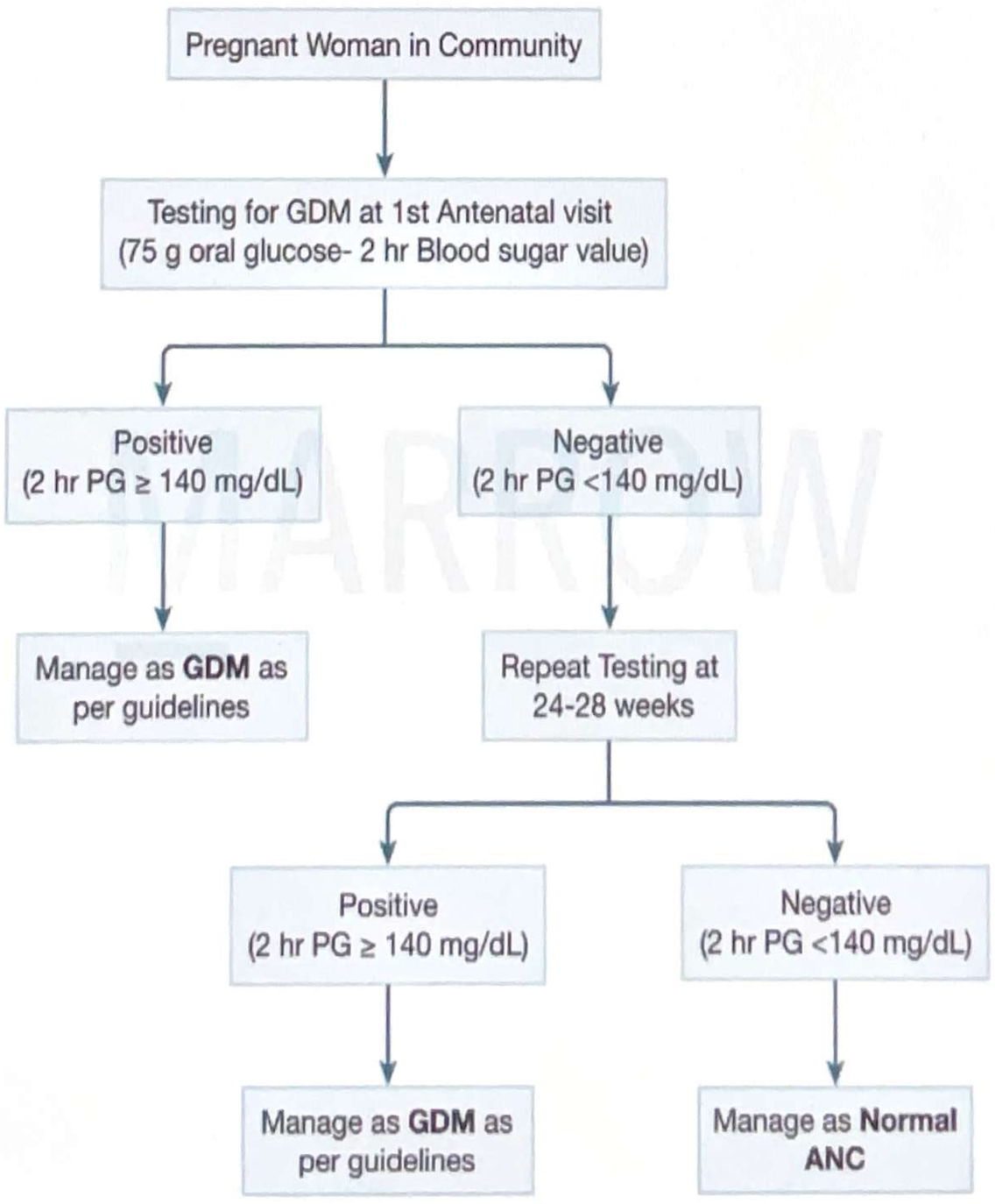
- No fasting required.
- 75g glucose given in 300ml water :
  - Usually available in 100g packs (1 teaspoon = 5g and 1 tablespoon = 15g).
  - Should drink within 5 minutes.
  - In the 2 hour waiting period : Preferably no food or exercise.
  - If patient vomits within 30 minutes of drinking : Cancel current test and repeat next day.
  - If patient vomits after 30 minutes : Complete the test.
- 1 value is checked 2 hours postprandial : If > 140g/dl, diagnosed as GDM.
- Test is done ideally at the first visit :
  - If patient presents at 2nd trimester then at 24-28 weeks.
  - If beyond 28 weeks : Only a single test is necessary.
  - A gap of 4 weeks necessary if 2 tests are performed.

Overt DM diagnosis :

Diagnosed if any of the following is satisfied :

- HbA1c : >6.5g%.
- RBS >200mg/dl.
- FBS ≥126mg/dl.

Universal Testing in GDM



Feedback

Note :

- Venous sample is ideal but not practical in smaller settings.
- Alternatively : A calibrated glucometer can be utilised.

Risk assessment :

Low risk :

- Age : < 25 years.
- BMI : Normal.
- Weight at birth normal.
- No family h/o DM or ethnicity at risk of DM (Asian/African population).
- No h/o glucose intolerance.
- No h/o GDM.
- Prior birth : Normal birth weight.

Average risk : On 50g glucose challenge test → Blood sugar >140mg/dl.

High risk :

- H/o GDM in previous pregnancy.
- Strong family h/o DM.
- Obese patient with high BMI.

Pre-conceptional counselling :

- Important in overt DM.
- Blood sugars should be normal, HbAIc <6.5.
- BP < 140/90, if on ACEI/ARB : Stopped and switched to an alternative drug.
- Ophthalmic evaluation : To r/o retinopathy (Indication for LSCS).
- ECHO/ cardiac evaluation.
- Thyroid function test.
- Advised physical exercises for 30 to 45 minutes x 5 days/week : Cycling, swimming or walking.
  - ↓ Glucose.
  - ↓ Insulin resistance.
  - Gluconeogenesis → ↓ Fetal hyperglycemia.

Antenatal goals :

- HbAIc <6.5.
- Normal thyroid levels.
- Ophthalmic exam : Normal.

----- Active space -----

- Normal ECHO.
- Blood sugar levels :

Fasting	2hrs PP	Average
<95	<140	100

Somogyi effect vs. Dawn phenomenon :

Somogyi effect	Dawn phenomenon
Rebound hyperglycemia d/t high dose of insulin	Counter regulatory hormones (E.g. : GH)
Diagnosis : 2am ↓ blood sugar and 5am ↑ blood sugar	Diagnosis : 2am ↑ blood sugar and 5am ↓ blood sugar
Treatment : ↓ dose of night insulin	Treatment : ↑ dose of night insulin

Maternal complications

00:23:28

- **Complications :**

Antepartum :

- Congenital anomalies :
  - HbAlc 6.5 : No increase in risk; HbAlc >9 : 2 fold increase in risk.
  - m/C anomaly is cardiovascular (COA, PDA, VSD, ASD).
  - most specific : Caudal regression sequence (Rare).
  - GI : Duodenal & jejunal atresia.
  - Kidneys : Polycystic kidney disease.
- Abortion : 25% of women with DM.
- Infections : UTI/ fungal (Candidiasis)/ vaginal.
- Polyhydramnios :
  - SDP >8 or AFI 24-25 or amniotic fluid of 2L.
  - mild/ moderate or severe.

Polyhydramnios criteria			
measurement	mild	moderate	Severe
SDP	8-10	10-12	>12
AFI	25-30	30-34	>35

  - mild : m/C and 70% of the time idiopathic.
  - Big baby → ↑ urine output → ↑ liquor.
  - Increased glucose in amniotic fluid

Feedback

- Congenital anomaly.

- Pre-eclampsia :
  - DAPIT trial : Vitamin C & E against placebo and was found that there was no improvement in risk of developing pre-eclampsia in a woman with diabetes except those with less oxidative stress.
  - ACOG recommendation : Start aspirin 81mg (Approx. 75mg) at 12-28 weeks in women with GDM.
- malpresentation.
- Preterm labour : Also d/t polyhydramnios and preeclampsia risk.
- Sudden IUD : Placental insufficiency, placental abruption, vasculopathy.
- IUGR : In DM associated vasculopathy.

Other complications :

Diabetic nephropathy :

- Albumin in urine, 30 to 300mg/24hr : No risk.
- >300 : macro albuminuria, can lead to chronic HTN & pre-eclampsia.
- monitored with : KFT, LFT and urine tests.

Neuropathy :

m/c affects stomach → Gastroparesis /hyperemesis.

Retinopathy :

- most dreaded complication.
- Indication for elective caesarean section : Valsalva causes ↑ IOP.
- Types : Non proliferative, pre proliferative (Cotton wool spots) and proliferative (Laser coagulation done beyond first trimester).

Diabetic Ketoacidosis :

- m/c in type I DM, ↑ mortality rate.
- Risk factors : Hyperemesis, infection, beta agonists, steroids, non compliance to insulin/ insulin pump failure.
- Diagnosis : Abdominal pain, nausea, vomiting & altered sensorium (Severe).
- Lab : Obtain ABG to document degree of acidosis present; measure glucose, creatinine, Ketones, & electrolyte levels at 1 to 2 hour intervals.

Management guideline : ACOG.

- Insulin :
  - Low-dose IV 0.2-0.4 u/kg.
  - Maintenance : 2-10 u/hr.

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- Fluids :
  - Isotonic sodium chloride 3 L, then 0.45% saline.
  - Total replacement in first 12 hours of 4–6 L.
  - 1 L in first hour.
  - 500–1000 mL/hr for 2–4 hours.
  - 250 mL/hr until 80 percent replaced.
- Glucose : Begin 5% dextrose in 0.45% saline when glucose plasma level reaches 250 mg/dL (14 mmol/L).
- Potassium :
  - If initially normal or reduced : An infusion rate up to 15–20 mEq/hr may be required.
  - If elevated, wait until levels decrease into the normal range, then add to intravenous solution in a concentration of 20–30 mEq/L.
- Bicarbonate : Add one ampoule (44 mEq) to 1 L of 0.45 normal saline if serum pH is <7.1.

Intrapartum complications :

- Increased risk of :
  - Perineal tear : Can lead to traumatic PPH.
  - Instrumental delivery.
  - LSCS.
  - Shoulder dystocia.

Postpartum complications :

- Sepsis.
- Lactation failure.
- PPH.

Fetal complications

00:40:04

Overview :

- Electrolyte imbalances :
  - Hypocalcemia : Ca^{2+} < 8.
  - Hypomagnesemia.
- Hyperbilirubinemia : Increased risk in a preterm baby d/t immature liver.
  - ↑ Fetal glucose → ↑ oxygen requirement ↑ → ↑ hypoxia → Leads to increase in bilirubin, RBC breakdown, increased erythropoiesis.
- ↓ Surfactant : RDS and hypoxic ischemic encephalopathy.

Feedback

- Neonatal hypoxia at birth.

macrosomia :

- RCOG classifies as >4.5kg, Indian guidelines classifies as >4kg.
- Indication for ceasarean section.
- Increased risk of cardiac dysfunction d/t ventricular hypertrophy → Sudden IUD.
- Fetal acidemia → pH imbalance causing sudden IUD.
- Difficulty in delivery : mcRoberts maneuver or LSCS.

Shoulder dystocia :

- Delay in delivery of the shoulder after delivery of the head : >5 minutes.
- Downward traction does not aid in delivery.
- Anterior shoulder > posterior shoulder.
- Risk factors :
  - DM.
  - Post term pregnancy.
  - BMI >30.
  - Induction of labor.
  - Arrest of labor.
  - Prolonged labor.
  - Anencephaly baby.
  - macrosomic baby.

Management : HELPERR.

- Call for help.
- Episiotomy.
- Legs are hyperflexed : mcRoberts manoeuvre (In macrosomia) → Straightening of sacrum against lumbar spine → Straightening of pubic symphysis angle → Easy shoulder delivery.
- Pressure : Fundal/ suprapubic pressure with heel of hand.
- Enter the vagina :
  - Wood's manoeuvre : Displace the posterior shoulder by 180° results in freeing of anterior shoulder.
  - Rubin's manoeuvre : Rock fetus side to side /abduct the shoulder in reach → Bisacromial diameter reduces → Easy to deliver.
- Gaskin manoeuvre : Roll onto all fours in Knee chest position.
- Traumatic (Last resort) :
  - Zavanelli manoeuvre → Delivered fetal head is pushed back in for an emergency LSCS.
  - Cleidotomy : To create space for delivery.
  - Symphysiotomy : Fracture pubic symphysis to create space and deliver.