High Risk Obstetrics Panel Discussion

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Preeclampsia • Placenta Previa • PPH • Jaundice in Pregnancy • GDM

High risk pregnancy – Definition And Criteria

* High-risk pregnancy is a pregnancy in which the mother, the fetus, or both have an increased chance of developing health problems before, during, or after delivery.

* In other words, it is a pregnancy that requires closer monitoring and specialized care than a normal pregnancy to ensure the best possible outcome.

High risk pregnancy – Criteria

* Maternal factors: Age <18 or >35 years, severe anemia, hypertension, diabetes, heart/renal disease, obesity.
* Previous obstetric history: Recurrent miscarriages, stillbirth, preterm birth, previous PPH, previous cesarean section.
* Current pregnancy complications: Preeclampsia, GDM, placenta previa/PAS, Jaundice , APH, PPH , multiple pregnancy, PPROM.
* Fetal factors: FGR/IUGR, congenital anomalies, malpresentation, fetal compromise.

1. Preeclampsia – Case Scenario

* 27-year-old primigravida at 33+4 weeks
* BP 168/112 mmHg, headache, visual symptoms
* Proteinuria 3+, thrombocytopenia
* FGR with abnormal Doppler

Preeclampsia - Definition & Diagnostic Criteria

* New-onset HTN after 20 weeks
* BP ≥140/90 mmHg 2 times 4 hours apart
* Proteinuria or organ dysfunction
* Severe features: BP ≥160/110, HELLP, pulmonary edema

First-Trimester Predictors (11–13+6 weeks)

Low PAPP-A

Low PlGF (Placental Growth Factor)

Increased uterine artery Doppler PI

Increased Mean Arterial Pressure (MAP)

Second-Trimester Markers

↑ Inhibin A

↑ hCG

↓ Unconjugated estriol (uE3)

Abnormal uterine artery Doppler (persistent notch, high PI)

First Trimester Screening Performance (Combined Algorithms)

Screen Positive Definition:

- Early-PE risk ≥ 1:200
- Preterm-SGA risk ≥ 1:150

Maternal factors + UTA-PI + MAP + PAPP-A + PlGF

Outcome	Detection Rate (%)
Early Pre-eclampsia (PE)	95.3%
Late Pre-eclampsia (PE)	45.6%
Preterm SGA	55.5%
Term SGA	44.3%

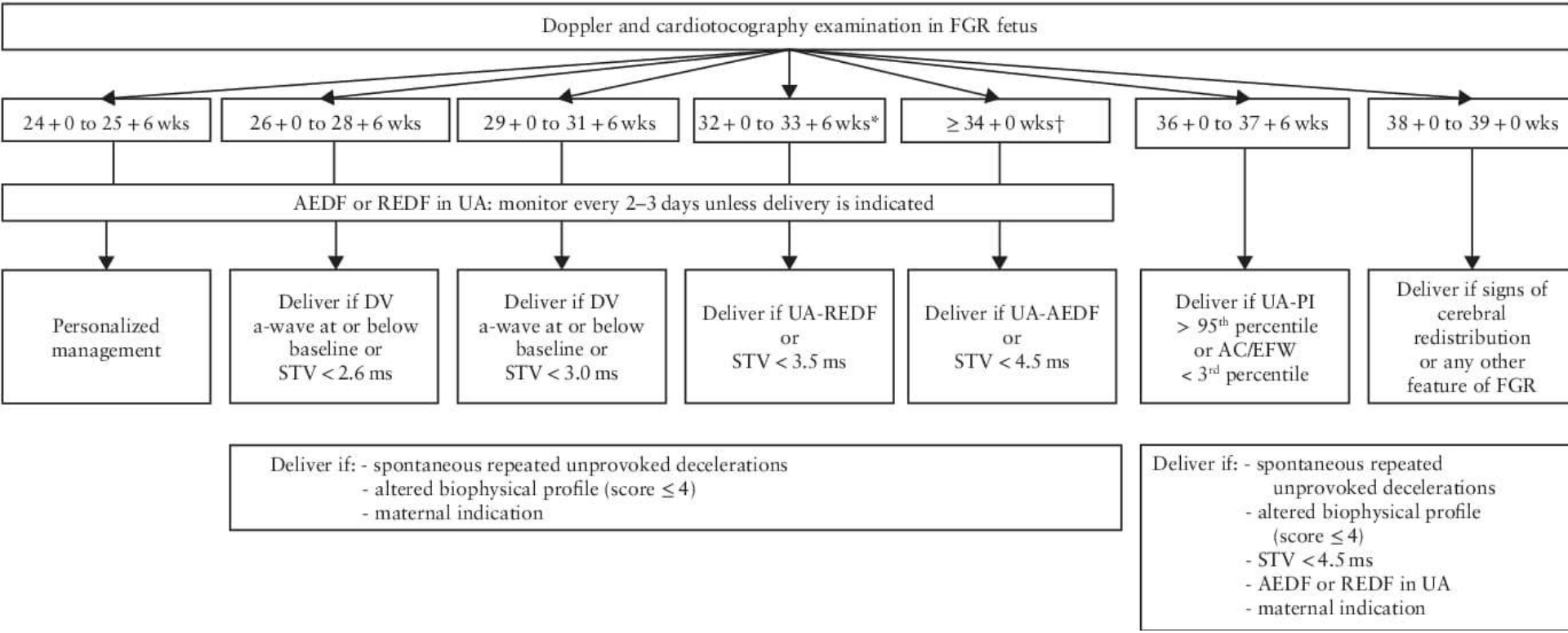
Pathophysiology of Preeclampsia

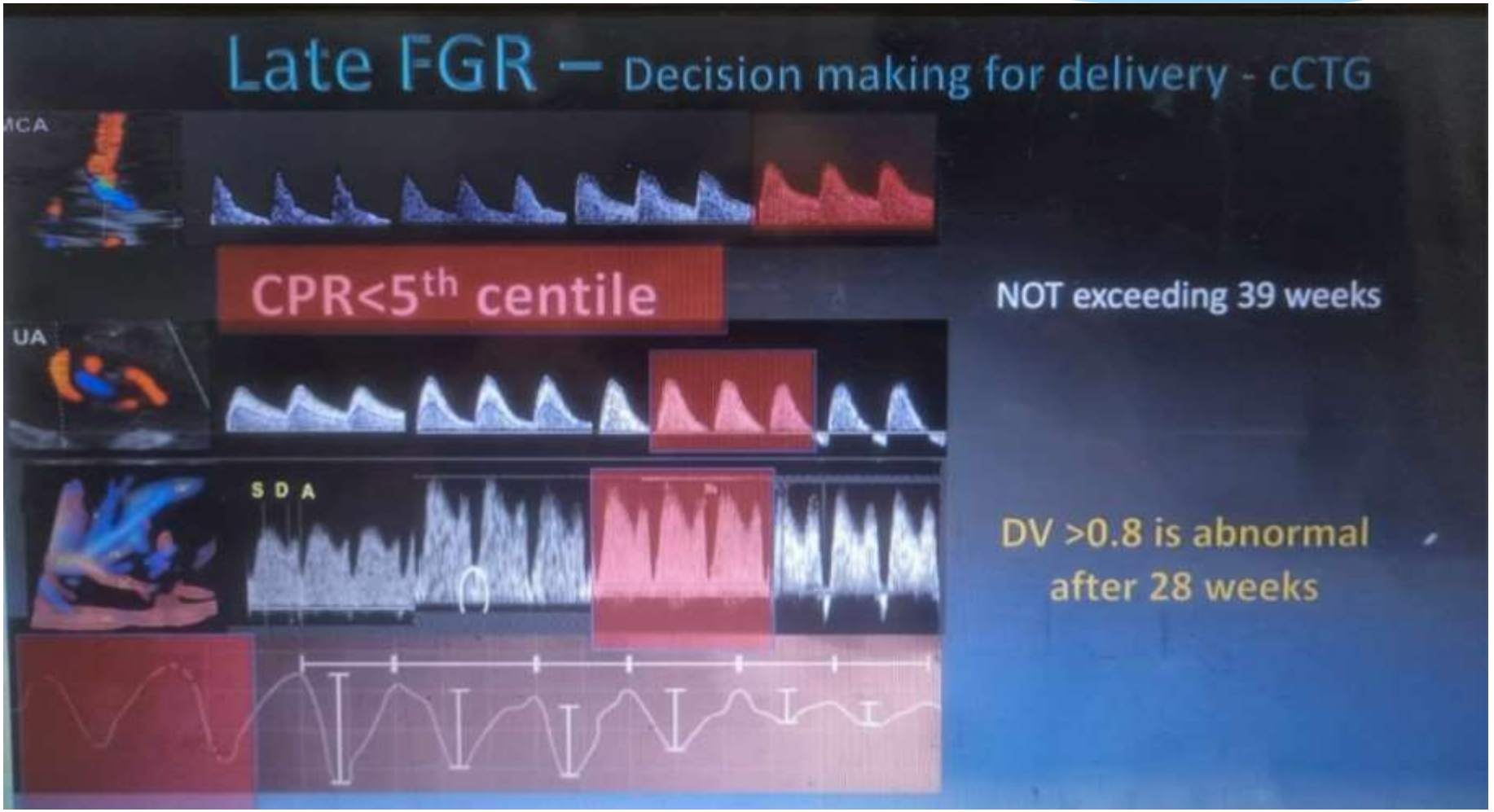
* Abnormal placentation
* Spiral artery remodeling failure
* Placental ischemia
* Endothelial dysfunction → vasospasm & capillary leak

Management of Severe Preeclampsia

* Stabilize mother first
* IV antihypertensives: labetalol/hydralazine
* Magnesium sulfate for seizure prophylaxis
* Monitor urine output, reflexes, respiration

Management of Early-Onset FGR Based on Doppler & CTG Surveillance (ISUOG 2020)




Late FGR – Decision making for delivery - cCTG
MCA
CPR<5th centile
NOT exceeding 39 weeks
UA
S D A
DV >0.8 is abnormal
after 28 weeks

Timing & Mode of Delivery

* Delivery is definitive treatment
* Gestational hypertension - 37 weeks
* Preeclampsia without severe features - 37 weeks
* Preeclampsia with severe features - 34 weeks
* Eclampsia / HELLP / maternal or fetal deterioration- Immediate delivery

2. Placenta Previa – Case Scenario

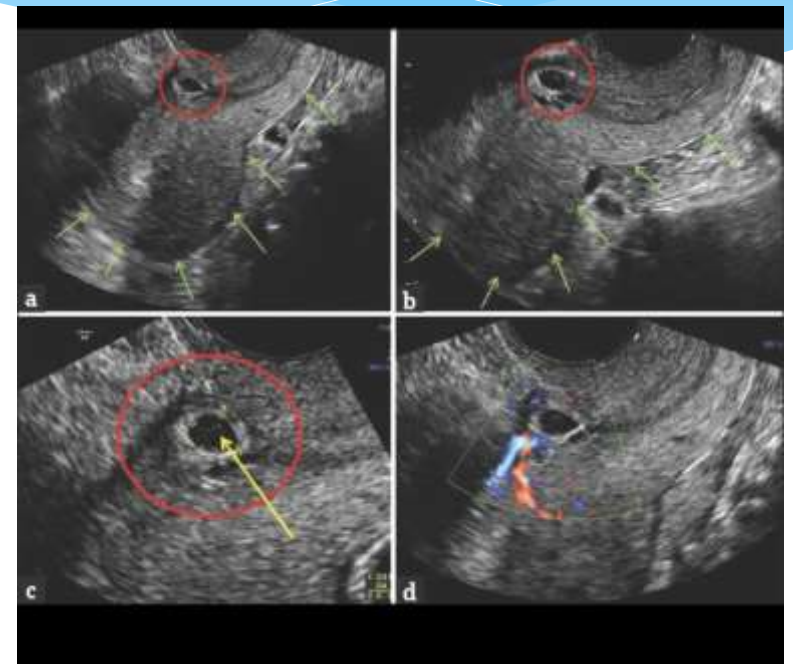
* 34-week G3P2L2 with painless bleeding
* Previous 2 LSCS
* USG: complete placenta previa

Placenta Previa / PAS - Definition

Placenta Accreta Spectrum (PAS) is a group of disorders characterized by abnormal adherence or invasion of the placenta into the uterine wall due to partial or complete absence of the decidua basalis and defective Nitabuch's layer.

In which case Early termination is advisable . ?

Lower implanted G - sac



True scar ectopic pregnancy

Placenta Previa – Types

* Types of PAS
* 1 . Placenta Accreta : Chorionic villi attach directly to the myometrium without invading it. Most common type.
* 2. Placenta Increta : Chorionic villi invade into the myometrium.
* 3. Placenta Percreta:

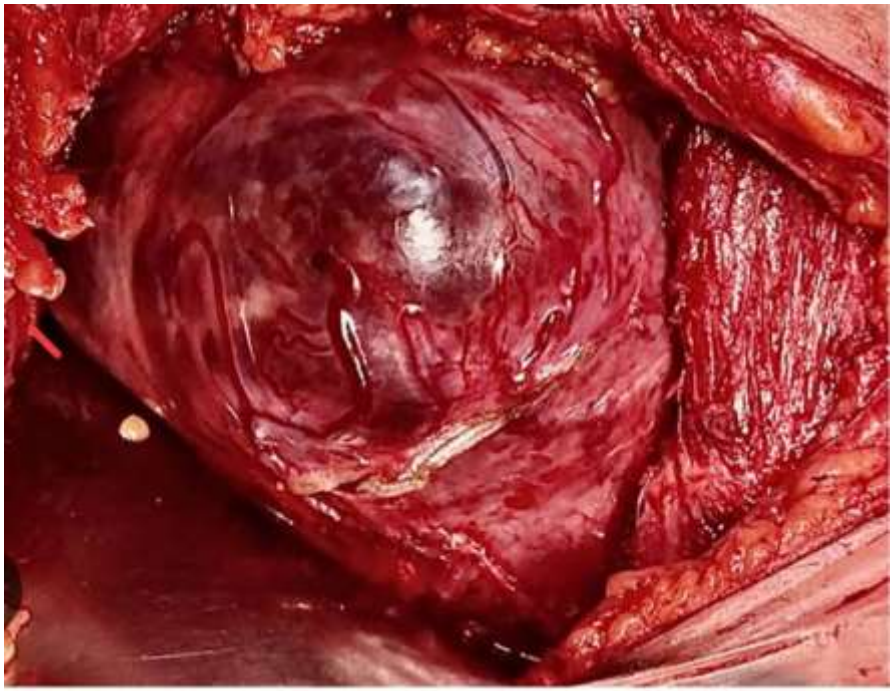
Chorionic villi penetrate through the entire myometrium and serosa and may invade adjacent organs, most commonly the urinary bladder.

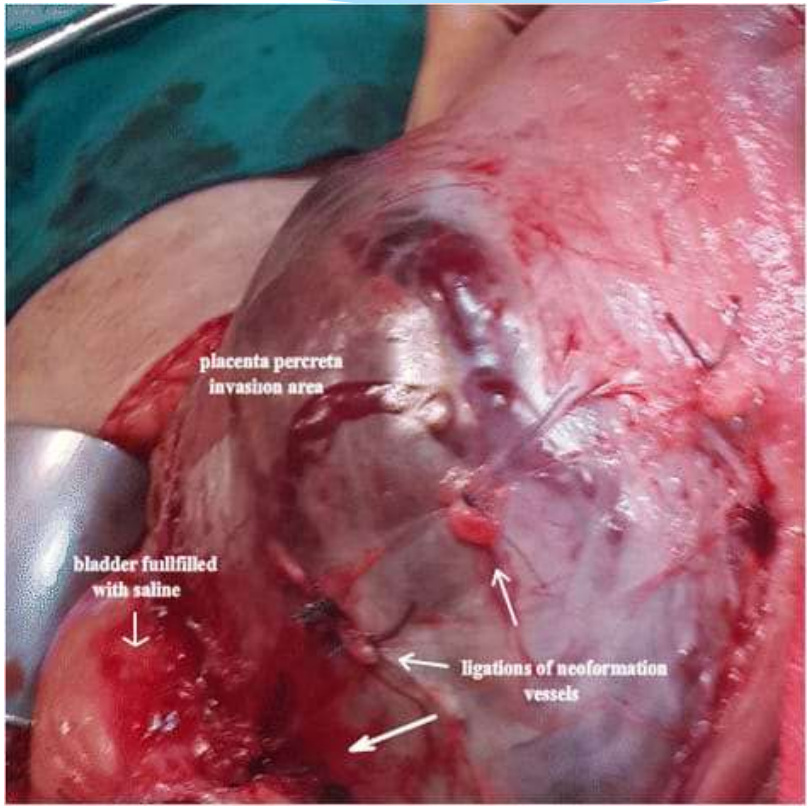
PAS – Major risk factors

* Previous cesarean section (1, 2, 3 or more; risk progressively increases)
* Previous uterine surgery:
* Myomectomy
* Hysteroscopic surgery
* Endometrial ablation
* Previous uterine curettage (D&C/MTP)
* Previous PAS
* Multiparity
* Advanced maternal age (>35 years)

QUESTION ZONE

IN CASE OF PAS - CONSERVATIVE UTERINE MANAGEMENT POSSIBLE OR NOT ?




placenta percreta
invasion area
bladder fullfilled
with saline
ligations of neoformation
vessels

STEPS OF PAS (SURGERY)

- Vertical / Transverse incision
- Uterine incision
  Over placenta / above placenta
- Bladder dissection
  Before/After uterine incision
- Placenta delivery
  Before/After(Attempt to remove manually or not)
- B/L UAL
  Assending branch /Dissending branch
- Scar/Fibrotic area excision and margin opposition
  OR
  Isthmocele excision

- Obstetric hysterectomy with cervix removal
- INTERNAL ILIAC LIGATION
- TOTAL OR SUB TOTAL HYSTERECTOMY IN CASE OF PAS .?
- DRAIN

IS PAS PREVENTABLE OR NOT . ?

IS PAS COMPLICATIONS PREVENTABLE OR NOT . ?

IS PAS COMPLICATIONS MINIMISE OR NOT .?

1. PAS is not completely preventable because placental implantation abnormalities cannot always be avoided.

2. However, many cases can be reduced by lowering unnecessary cesarean sections. Judicious use of uterine surgery (myomectomy, curettage, hysteroscopic procedures).

3. More importantly, PAS-related morbidity and mortality are largely preventable through early diagnosis, multidisciplinary planning, and delivery in specialized centers.

4. Antenatal diagnosis by expert ultrasound ± MRI Referral to tertiary PAS center Multi-disciplinary team approach Planned cesarean hysterectomy (34–36+6 weeks in most cases) Adequate blood products available Experienced surgeons

3. Postpartum Hemorrhage – Case

* Heavy bleeding after vaginal delivery
* Pulse 132/min, BP 80/50
* Boggy uterus
* Blood loss ~1500 mL

Postpartum Hemorrhage – DEFINITION

Postpartum hemorrhage (PPH) is defined as:

Blood loss ≥ 500 mL after a vaginal delivery,

Or

Blood loss ≥ 1000 mL after a cesarean delivery

Within 24 hours of birth

PPH – Causes

* 4 Ts:
* Tone – uterine atony
* Trauma – tears
* Tissue – retained placenta
* Thrombin – coagulopathy

PPH – Stepwise Management

* Call for help – ABC assesment
* Two IV lines & blood products and oxygen
* Uterine massage + uterotonics (i.e oxytocine)
* Tranexamic acid within 3 hours

MEDICAL MANAGEMENT

* Uterotonics (Mainstay for Atonic PPH)
* 1. Oxytocin (First-line)10 IU IM or IV slow Then 20–40 IU in 500–1000 mL IV infusion
* 2.Methylergometrine0.2 mg IM/slow IV Avoid in hypertension/preeclampsia
* 3. Carboprost (15-methyl PGF2α)250 mcg IM Repeat every 15–90 min Maximum 8 doses (2 mg total)Avoid in asthma
* 4. Misoprostol800–1000 mcg per rectum Alternative when injectables unavailable Tranexamic Acid (Important)1 g IV over 10 minutes Give within 3 hours of birth Repeat 1 g after 30 min if bleeding continues

Advanced PPH Management

* Mechanical method-Balloon tamponade
* Surgical -B-Lynch compression sutures
* Stepwise Devascularisation
* Emergency obstretics hysterectomy

4. Jaundice in Pregnancy – Case

* 35-week patient with jaundice
* Vomiting, malaise, hypertension
* Elevated liver enzymes
* Hypoglycemia & thrombocytopenia

Jaundice in Pregnancy – DEFINITION

* Jaundice in pregnancy is the yellow discoloration of the skin, sclera, and mucous membranes due to elevated serum bilirubin levels occurring during pregnancy, resulting from pregnancy-specific or non-pregnancy-related liver disorders.

* "Is this a pregnancy-specific liver disorder requiring delivery, or a coincidental liver disease requiring medical management?"

Differential Diagnosis

* HELLP syndrome
* Acute fatty liver of pregnancy
* Intrahepatic cholestasis
* Viral hepatitis

COMPARITIVE STUDY

Feature	ICP	HELLP	AFLP	Viral Hepatitis
Timing	2nd–3rd trimester	3rd trimester/Post partum	3rd trimester	Any trimester
Pruritus	+++	Rare	Rare	Rare
Hypertension	No	Yes	±	No
RUQ/Epigastric Pain	Rare	Common	Common	Variable
Jaundice	Mild	Mild	Moderate–Severe	Severe
Platelets	Normal	↓ Low	↓/Normal	Normal
Hemolysis	No	Yes	No	No
AST/ALT	Mild ↑	Moderate ↑	Moderate ↑	>1000 IU/L
Bilirubin	<6 mg/dL	Mild ↑	5–10 mg/dL	>10 mg/dL
Hypoglycemia	No	No	Yes	No
Coagulopathy	Mild	Mild	Severe	Variable
Serum Bile Acids	↑↑	Normal	Normal	Normal
Renal	Rare	May occur	Common	Rare

HELLP Syndrome

* Hemolysis
* Elevated liver enzymes
* Low platelets
* Severe variant of preeclampsia

HELLP Syndrome

Should all HELLP patients be delivered immediately?

Current consensus :

≥34 weeks → delivery

<34 weeks → brief stabilization may be considered

Intrahepatic cholestasis of pregnancy (ICP)

* Serum bile acids:

1. 40 µmol/L → increased fetal risk
2. 100 µmol/L → markedly increased stillbirth risk

* Current Management :

1. Ursodeoxycholic acid
2. Fetal surveillance
3. Delivery generally 36–38 weeks depending on bile acid levels

Intrahepatic cholestasis of pregnancy (ICP)

* Panel Question

Does UDCA reduce stillbirth?

* Evidence:

Improves maternal symptoms and biochemistry.

Direct reduction in stillbirth remains debated.

TIMING OF DELIVERY

Condition	Delivery Strategy
ICP	36–38 weeks
HELLP	After stabilization
AFLP	Immediate
Viral hepatitis	Obstetric indication only

Gestational Diabetes – Case

* 31-year-old obese 37 WEEKS primigravida
* OGTT positive
* Polyhydramnios
* Macrosomic fetus

5. Gestational Diabetes – DEFINITION

Gestational diabetes mellitus (GDM) is glucose intolerance resulting in hyperglycemia that is first recognized during pregnancy and is not clearly overt diabetes diagnosed before pregnancy.

GDM – RISK FACTROS

* Previous GDM
* Obesity (BMI >25 kg/m^2 in Indians)
* Family history of diabetes
* Previous macrosomic baby (>4 kg)
* Previous unexplained
* Stillbirth
* PCOS
* Advanced maternal age (>25–30 years)
* History of recurrent pregnancy loss

GDM – Screening & Diagnosis

* Universal screening in India
1. First antenatal visit
2. Between 24 – 28 weeks
* DIPSI: 75 g glucose test
* 2-hour value ≥140 mg/dL diagnostic

Complications of GDM

* Maternal:

During Pregnancy :

1. Preeclampsia
2. Polyhydramnios
3. Recurrent infections
4. Increased cesarean delivery

Long-term :

1. 50–70% risk of Type 2 DM later in life
2. Metabolic syndrome
3. Cardiovascular disease

Fetal & Neonatal Complications

* Fetal

1. Macrosomia
2. Shoulder dystocia
3. IUFD (poorly controlled diabetes)

* Neonatal

1. Hypoglycemia
2. Hypocalcemia
3. Polycythemia
4. Hyperbilirubinemia
5. Respiratory distress syndrome

Management of GDM

* Medical nutrition therapy :
1. first line treatment
2. Exercise
3. Diet modification
* Glucose target :
1. Fasting <95 mg/dL
2. 1-hour PP <140 mg/dL
3. 2-hour PP <120 mg/dL
* Pharmacotherapy :
1. Insulin gold standard
2. Metformin

Timing of Delivery in GDM

* Controlled GDM: 39–40 weeks
* Well controlled on medication : 39 weeks
* Poor control: 37 – 38 + 6 weeks
* Severe maternal / fetal compromise: earlier delivery
* Assess fetal weight & complications

* Post-partum follow up : 75 gm OGTT at 6 – 12 weeks post-partum

Recent Guideline Pearls

* ACOG/RCOG/FIGO recommendations
* Tranexamic acid in PPH
* MgSO4 in severe preeclampsia
* Universal GDM screening in India

Rapid Fire Faculty Questions

* Role of biomarkers in preeclampsia?
* MRI in placenta accreta?
* REBOA in PPH?
* CGM in GDM?

Take Home Messages

* Early diagnosis saves lives
* Multidisciplinary care is essential
* Delivery timing is crucial
* Preparedness reduces maternal mortality