WEBINAR ON NEONATAL CARE GUIDELINES CHAPTERS: IMMEDIATE CARE OF A NEONATE

PERINATAL MEDICAL CONDITIONS AND EFFECTS ON THE NEONATE

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OUTLINE

- LIST OF COMMON MEDICAL CONDITIONS IN PREGNACY
- DEFINE FEATURES OF MEDICAL CONDITIONS
- LINKAGE OF NEONATAL BIRTH OUTCOMES TO MEDICAL CONDITIONS
- MANAGEMENT OF BABY

LIST OF PERINATAL MEDICAL CONDITIONS

- ASTHMA
- CARDIAC CONDITIONS
- DIABETES
- EPILEPSY
- THYROID DISEASES
- ANAEMIA
- HYPERTENSIVE DISORDERS OF PREGNANCY

ASTHMA

It results from airway hyper-responsiveness to irritants

- Severe asthma gets worse pregnancy.
- Uncontrolled leads to maternal and fetal complications (Table 4).
- Malformations reported with maternal asthma medication use (rare) - gastroschisis with bronchodilator use and cleft palate and/or cleft lip with systemic glucocorticoids.

ASTHMA- Risk Factors

Maternal complications	Fetal and neonatal complications
▪ Pre-eclampsia ▪ Hypertension ▪ Hyperemesis gravidarum ▪ Gestational diabetes ▪ Caesarean section delivery	• Stillbirth and infant death • Intrauterine growth restriction (IUGR) • Premature birth • Low birth weight • Neonatal hypoxia • Intensive care unit admission • Respiratory distress syndrome (RDS) • Transient tachypnoea of the newborn (TTN) • Hyperbilirubinaemia (jaundice)

GENERAL MANAGEMENT OF MOTHER & BABY

1.Antenatal Care:

1. **Optimized asthma control** during pregnancy .
2. Regular prenatal visits allow monitoring of both maternal and fetal health.

2.Preventive Measures:

- **Asthma Medication**: Ensure the mother continues her prescribed asthma medications during pregnancy.
- **Avoid Triggers**: Minimize exposure to asthma triggers (e.g., smoke, allergens).
- **Vaccinations**: Follow recommended vaccination schedules to protect against infections.

3.Postnatal Care:**Close Monitoring**: Regular check-ups for the baby's growth, development, and respiratory health.

4. Neonatal Risks:

- **Major Congenital Malformations**: Infants born to mothers with asthma have a heightened risk of developing major congenital malformations
- **.Respiratory Distress Syndrome (RDS)**: Babies may experience breathing difficulties due to immature lungs.

MANAGEMENT OF BABY BORN TO MOTHER WITH ASTHMA

- After birth, monitor blood glucose of babies born to mothers on high dose short-acting beta-agonists.
- Asses for any malformations-e.g. gastroschisis(bronchodilators), cleft/lip palate (glucorticoids)

ANAEMIA

DEF- HB < 11g/dl in the 1st trimester, or < 10.5g/dl in 2nd trimester

Risk to the baby

Lack of oxygen to the fetus from the mother can lead to many health problems in the fetus:

- Perinatal mortality
- Intrauterine growth retardation- poor fetal growth in utero. leading to fetus to be smaller than normal for its gestational age.
- Preterm birth
- Low birthweight
- Neonatal hypoxia-Lack of oxygen to the fetus from the mother

MANAGEMENT OF MOTHER WITH ANAEMIA

- **Full history, FBC, MCV, red cell folate & vitamin B12**
- **Urine for MC&S and stool sample for occult blood**
- **Malaria smear**
- **FESO4 200mg 3 times daily & continue with folic acid 5 mg daily**

Management of the baby

DIABETES MELLITUS

- **Gestational diabetes (GDM) degree of impaired glucose tolerance of with onset or first recognition during pregnancy .**
- **Diagnosis of overt diabetes**
- **Random glucose of > 11.1mmol/l**
- **Fasting glucose >7mmol/l**
- **2 hour glucose OGTT >11.1MMOL/L**
- **HBA1C >6.5 %**

RISKS FOR INFANT TO DIABETIC MOTHER

- Congenital abnormalities
- Increased neonatal and perinatal mortality
- Macrosomia
- Late stillbirth
- Neonatal hypoglycemia
- Polycythemia
- Jaundice

MANAGEMENT OF INFANT TO DIABETIC MOTHER

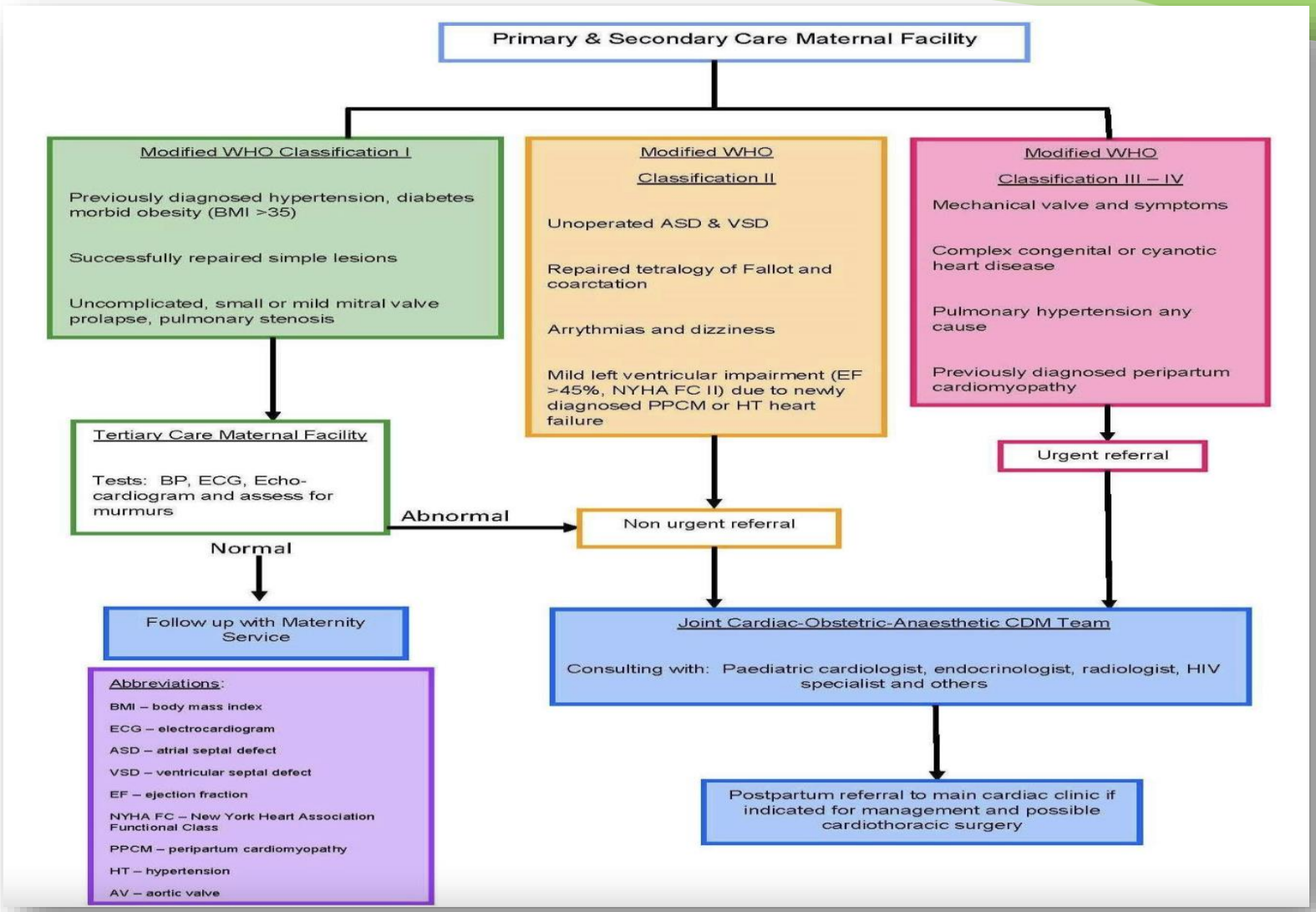
- **Rapid assessment & resuscitation**
- **Check for congenital anomalies**
- **Feed within 30 minutes then 2-3hourly thereafter**
- **Monitor BG pre & post-feed aiming for glucose > 2.6**
- **Check for signs of hypoglycemia BG <2.6 mmol/L**

CARDIAC DISEASE

- **Pre pregnancy counselling**
- **Planned pregnancy with MDT, feto-maternal specialist, cardiologist, paediatrician & anaesthetist**
- **1st antenatal visit a thorough history should be taken – operations, cardiac clinics attended and current symptoms of cardiac disease and a full exam (check for scars)**
- **Check for signs and symptoms of cardiac failure**

New York Heart classification (NYHA) for heart failure

Class 1	No limitation of physical activity. Ordinary physical activities do not cause undue fatigue, palpitations, shortness of breath, chest pain
Class 2	Ordinary physical activities do cause undue fatigue, palpitations, shortness of breath, chest pain
Class 3	Less than ordinary physical activities do cause undue fatigue, palpitations, shortness of breath, chest pain
Class 4	Symptoms at rest. Fatigue, palpitations, shortness of breath, chest pain occurs at rest


Primary & Secondary Care Maternal Facility
Modified WHO Classification I
Previously diagnosed hypertension, diabetes morbid obesity (BMI >35)
Successfully repaired simple lesions
Uncomplicated, small or mild mitral valve prolapse, pulmonary stenosis
Modified WHO Classification II
Unoperated ASD & VSD
Repaired tetralogy of Fallot and coarctation
Arrythmias and dizziness
Mild left ventricular impairment (EF >45%, NYHA FC II) due to newly diagnosed PPCM or HT heart failure
Modified WHO Classification III – IV
Mechanical valve and symptoms
Complex congenital or cyanotic heart disease
Pulmonary hypertension any cause
Previously diagnosed peripartum cardiomyopathy
Urgent referral
Tertiary Care Maternal Facility
Tests: BP, ECG, Echo-cardiogram and assess for murmurs
Abnormal
Non urgent referral
Normal
Follow up with Maternity Service
Joint Cardiac-Obstetric-Anaesthetic CDM Team
Consulting with: Paediatric cardiologist, endocrinologist, radiologist, HIV specialist and others
Postpartum referral to main cardiac clinic if indicated for management and possible cardiothoracic surgery
Abbreviations:
BMI – body mass index
ECG – electrocardiogram
ASD – atrial septal defect
VSD – ventricular septal defect
EF – ejection fraction
NYHA FC – New York Heart Association Functional Class
PPCM – peripartum cardiomyopathy
HT – hypertension
AV – aortic valve

MANAGEMENT IN LABOUR

1st stage of labor

- Nurse at 45 degrees
- Insert IV line – 200ml
- Adequate analgesia – morphine IM 0.1mg/kg 4 hrly as needed
- Ampicillin 1g IV 6 hourly & Gentamycin 240mg IV or Vancomycin 1g IV if allergic to penicillin
- Monitor fluids

2nd and 3rd stage of labour

- Instrumental delivery
- Local anaesthetic for episiotomy should not contain adrenalin
- DO NOT give ergometrine but oxytocin 10 units IM
- NYHA II give furosemide 40mg IV after delivery

Fourth stage & peuperium

Most common time for patient to decompensate into pulmonary oedema
Avoid IV fluids
Keep in high care setting
Screen newborn for anomalies
Avoid estrogen containing contraceptives
Progesterone only contraceptives

Pulmonary edema

- High index of suspicion
- Nurse at 45 degrees
- Give oxygen by facemask
- IV line – give furosemide 40mg
- Morphine 5mg slow IV bolus
- Once stable transfer to specialist hospital

ASTHMA

- History of asthma – refer to next level of care
- Acute asthma attack -referr as an emergency to next level of care
- Severe recurrent asthma attack refer to next level of care
- Aim to achieve freedom from symptoms
- Beta 2 stimulants & inhaled or systemic steroids
- Labour according to normal obstetrics

VTE

Pregnancy is a hypercoagulable state

- **Previous VTE needs VTE prophylaxis during pregnancy & up to 6 weeks post delivery**
- **Check for symptoms and signs of DVT – confirm with duplex doppler**
- **Suspected DVT or PE -urgent referral**
- **DH start anticoagulation & refer to specialist clinic**

2 or more of the intermediate risk factors offer heparin 5 days

Age > 35 years
High BMI, smoker, ELCS, paraplegia
Current infection, gross varicose veins
Current PET, prolonged labour
PPH > 1 Liter
If only one of the above prevent dehydration & encourage early mobilisation

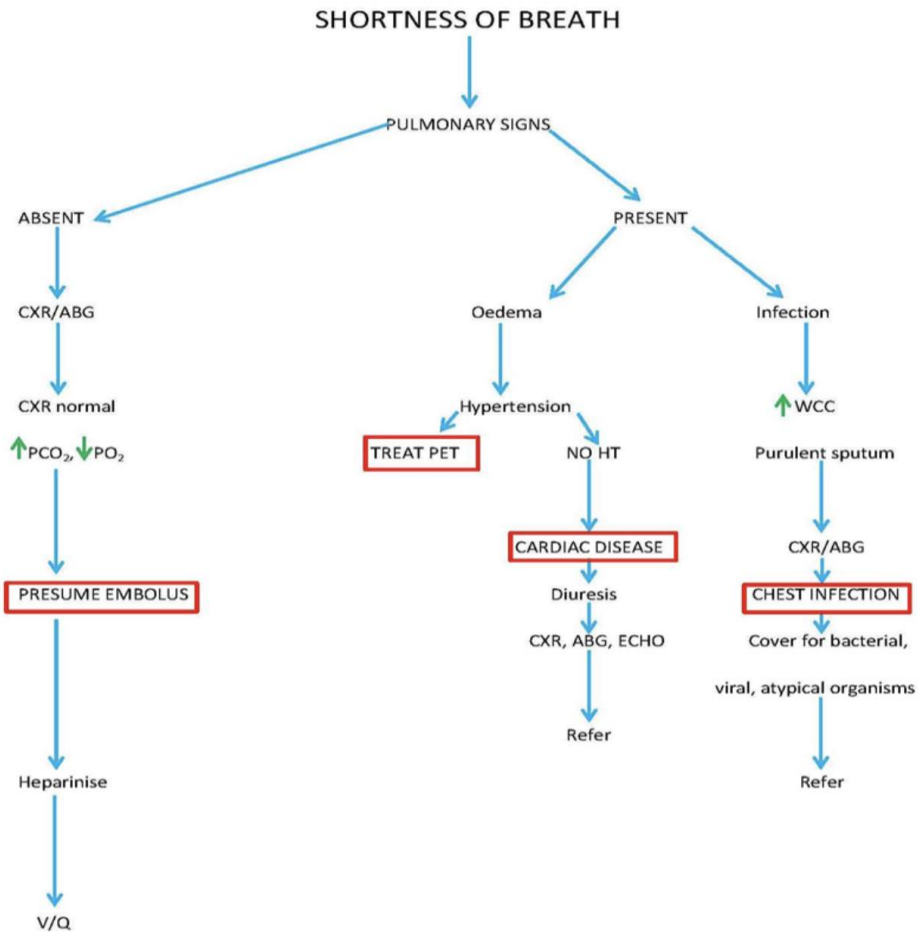
One of the following risk factors offer heparin

Emergency c/section
Prolonged hospital stay
IV drug user

Pulmonary embolus

Leading cause of maternal mortality
High index of suspicion
SOB, pleuritic chest pain , hypoxaemia
Diagnose ABG reveal hypoxaemia and hypocapnia, resp alkalosis
CTPA

SHORTNESS OF BREATH



Any red flags

- **Sat O2 <95 %**
- **HR > 120bpm**
- **RR >24bpm**
- **Altered mental status**
- **Stridor**
- **Diffuse crackles**
- **Difficulty speaking**

health
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EPILEPSY

- Prior pregnancy - folic acid 5 mg
- Carbamazepine, lamotrigine or levetiracetam drug of choice
- Women on phenytoin or sodium valproate should be referred to tertiary center for counselling & change to another drug
- Monotherapy at lowest effective dose ideal
- Screening for congenital anomalies
- Exclude other causes of seizures even in a known epileptic
- Obstetric care same as for non epileptic patients

THYROID DISEASE

- **Refer to specialist**
- **Examine thyroid gland during first booking, goitre suspected – book ultrasound and TFT**
- **TFT is indicated in patients with clinical features of hyper & hypothyroidism**
- **Clinical examination of the baby post delivery**
- **Cord blood for TSH & T4 – discuss with specialist if abnormal**
- **Hypothyroidism must be treated within 28 days of life due to risk of irreversible mental impairment if treatment is delayed past 1 month**

RENAL DISEASE

- AKI - infection, blood loss, volume contraction
- Treat underlying cause, VGB, daily electrolytes – fluid balance NB
- Treat any associated coagulopathy
- Avoid fluid overload in patients with PET
- Women with known renal disease should be referred to specialist to evaluate severity of renal impairment, proteinuria and hyperternsion
- Women with hypertension & proteinuria prior to 20 weeks gestation should be referred to tertiary institution for further work up
- Stage 4 renal disease should avoid pregnancy

OBESITY IN PREGNANCY

Definition

- Obesity is a body mass index (BMI) ≥30kg/m^2
  - Class I obesity: BMI 30-34.9 kg/m^2
  - Class II obesity: BMI 35-39.9 kg/m^2
  - Class III obesity: BMI 40 kg/m^2 and above (morbid obesity)

- **Women with high BMI are at increased risk of maternal & neonatal complications**
- **Assess for co-morbid conditions & risk factors associated with obesity**
- **DO NOT MOCK, shame or blame women for living with obesity**

MANAGEMENT OF OBESITY

- **Preconception**
- **Antenatal**
- **Intrapartum**
- **Postpartum**

Antenatal care and referral routes

- BMI of < 35 kg/m^2 can be managed at a MOU or BANC+ clinic if otherwise low risk.
- BMI of 35-39 kg/m^2 should ideally be managed at a district hospital, or MOU if otherwise low risk.
- BMI of 40 kg/m^2 or more should ideally be managed at a regional hospital or specialist outreach clinic, referred for specialist care where available.
- BMI of ≥ 50 kg/m^2 will need management and delivery at a specialist or tertiary institution.

SUBSTANCE ABUSE

- Counselling
- Respectful care principles – do not shame or blame women who use substances
- Check for multiple drug use, domestic violence and mental health concerns
- Identify comorbidities and treat STI
- MDT- psychosocial, support systems, place of safety, MH, address nutrition
- Inform paediatrician – neonatal withdrawal
- Contraceptives to be discussed

THANK YOU