MEDICAL CONDITIONS IN PREGNANCY

A SILVER

27 FEB 2024

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ANAEMIA

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

- Booking HB > 10 g/dl repeat at 30 weeks & 38 weeks
- HB < 10 g/dl – closer follow up after initiating treatment

- **Preventive**
- Start ferrous fumurate 200mg dly
- Ferrous sulphate twice daily
- Encourage compliance
- Discourage consumption of soil, charcoal
- Taken with meals
- Avoid taking iron tablets concurrently with calcium tablets (ca in the morning & iron at dinner)

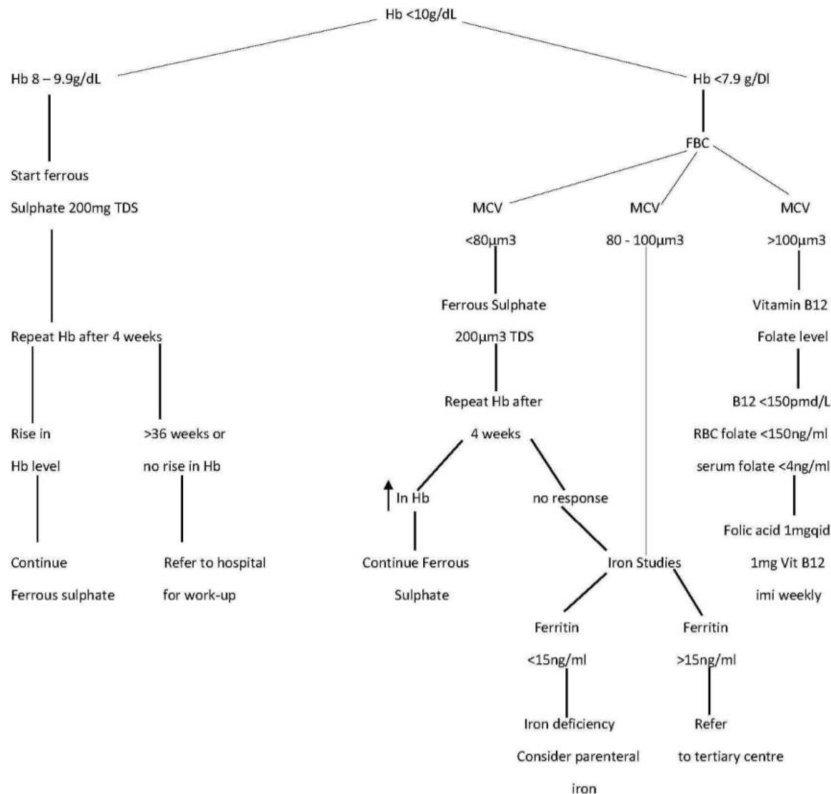
RISK FACTORS
Poor diet
Parasitic infections – hookworm /bilharzia
Short interpregnancy interval
Multiple pregnancy
Heavy menses
Malaria
Grand multiparity eating disorders

MANAGEMENT OF 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**
- **Refer from primary health to CHC**

Hb level	Action
Hb <6.0 g/dL	Urgent transfer to hospital the same day.
Hb 6.0-7.9 g/dL	Urgent transfer to a hospital if symptomatic (dizziness, tachycardia, shortness of breath at rest). If not symptomatic, refer to the next high-risk clinic within one week.
Hb 8.0 to 9.9 g/dL	Transfer to a high-risk clinic if no improvement after one month of treatment.
Hb <10 g/dL at 36 weeks gestation or more	Transfer to hospital for further antenatal care and delivery.

Admission to hospital
Avoid overloading pts, transfuse only if symptomatic
<36 weeks FESO4 12 hrly RPT 4WKS
>36 weeks IV IRON THERAPY HOSPITAL



BLOOD TRANSFUSION FOR ANAEMIA

Transfuse 1 unit RPC if Hb <8.0g/dl if patient going for emergency c/section

Hb < 6.0g/dl & the woman is in labour

Correct anaemia in patients booked for ELCS

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DIABETES MELLITUS

- Prior current pregnancy
- Planned pregnancy, optimize control with HBA1C <6.7%
- Tight control of BG levels from the time of conception & earlier antenatal booking
- Refer specialist clinic
- Metformin safe in pregnancy
- Aspirin 150mg prior to 16 weeks gestation
- Screen for congenital anomalies

Diagnosis of overt diabetes

- Random glucose of > 11.1mmol/l
- Fasting glucose >7mmol/l
- 2 hour glucose OGTT >11.1MMOL/L
- HBA1C >6.5 %

GESTATIONAL DIABETES

- Develops for the 1st time in current pregnancy & resolves within 6 weeks postpartum
- Screen all women with risk factors at the 1st antenatal visit & at 24-28 weeks
- NICE criteria /WHO 2015 diagnostic criteria for testing
- Point of care glucometer may also be used

RISK FACTORS FOR GDM

Underlying patient factors	Patient from an ethnic group with high prevalence of diabetes (e.g. Indian)
	Obesity (patient BMI ≥35)
	Age ≥40 years
Previous history	Previous history of gestational diabetes (diabetes in a previous pregnancy)
	First degree relative with diabetes
	Previous unexplained intrauterine fetal death
	Previous baby with congenital abnormalities
	Previous macrosomic baby (birth weight ≥4 kg)
Current pregnancy	Polyhydramnios
	Fetus large for gestational age
	Glycosuria (glucose 1+ or more on urine dipstick on 2 or more occasions)
	Chronic use of corticosteroids

MANAGEMENT OF GDM

- **Dietician for diabetic diet**
- **Refer next level of care within 1 week**
- **Manage at district hospital if controlled on diet with fasting sugar of <5.3 and 2 hour post prandial <7 mmol/L (If managed at DH must be shared care with specialist clinic)**
- **If not controlled refer to hospital – start metformin/ insulin**

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MANAGEMENT OF INFANT TO DIABETIC MOTHER

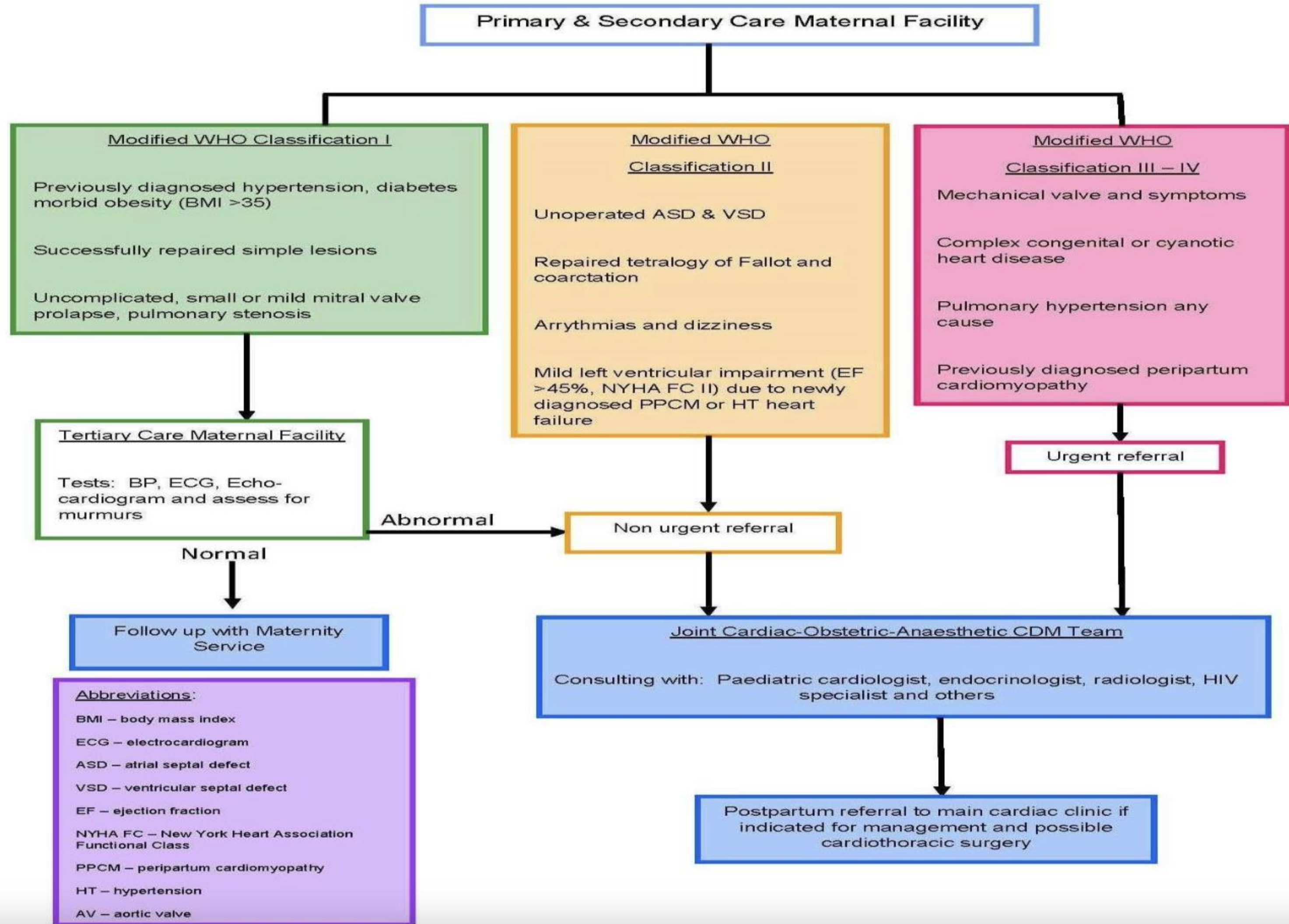
- Rapid assessment & resuscitation
- Check for congenital anomalies
- Feed within 30 minutes then 2-3hourly thereafter
- Monitor BG pre & post-feed aiming for glucose > 2.6
- Check for signs of hypoglycemia BG <2.6 mmol/L

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
Tertiary Care Maternal Facility
Tests: BP, ECG, Echo-cardiogram and assess for murmurs
Abnormal
Normal
Non urgent referral
Urgent referral
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

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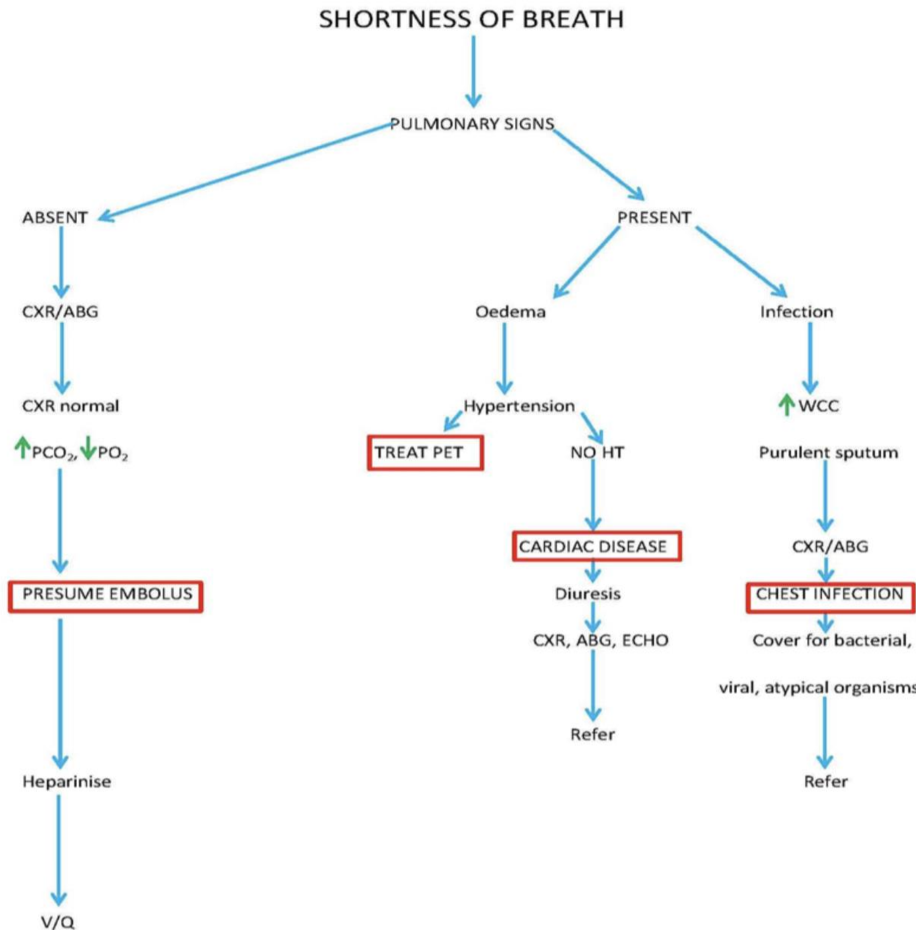
SHORTNESS OF BREATH



Any red flags

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

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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