Assessment Algorithm for Pregnant & Postpartum Women Presenting with Signs & Symptoms of Cardiovascular disease

Red flags

Symptoms
- Sudden onset shortness of breath
- 'New' asthma / asthma not responding to treatment
- Orthopnoea / paroxysmal nocturnal dysponoea
- Chest pain
- Blackouts

Signs
- Haemodynamically unstable:

>> HR ≥120 or <45 bpm at rest
>> SBP ≥160 or <90 mmHg at rest
>> RR >30/min

- SpO2 <94%

History
- Two or more similar presentations during this pregnancy

Yes
- Admit & investigate
- Observations – HR, NIBP, temp, SpO_2 (compare to patients normal), fetal heart beat
- Bloods – FBC, U&Es, Coag, +/- bone profile, Mg, +/_ Troponin*, NT-proBNP*
- ECG, CXR, and other indicated investigations
- Consultant review within 1 hr, senior obstetric review within 1 hr, senior cardiology review & echo (if indicated) within 1 hr
- Document all on Badgernet via obstetric registrar AND main hospital electronic record (e.g. Clinical portal, Trakcare)

No

Amber flags: +ve = ≥1 Symptoms + ≥1 Signs + ≥1 Risk Factors OR any combination

Symptoms
- Shortness of breath
- Palpitations
- Dizziness

Signs
- HR >110 at rest
- Systolic BP >140mmHg at rest
- RR >25/min
- SpO2 <95%
- Loud murmur
- Altered mental state

Risk factors
- Personal history of cardiovascular disease
- Age >40yrs
- Family history CVD (see next page)
- BMI >40
- Pre-existing diabetes or hypertension
- Known coagulation disorder
- Previous DVT/PE
- Smoker

Yes
- Admit & investigate
- Observations – HR, NIBP, SpO_2, temp, fetal heart beat (compare to patients normal)
- Bloods – FBC, U&Es, Coag, +/- bone profile, Mg +/_ Troponin*, NT-proBNP*
- ECG, CXR, and other indicated investigations
- Consultant review within 1 hr & senior obstetric review within 1 hr
- Senior cardiology review & echo (if indicated) within 1 hr
- Document all on Badgernet via obstetric registrar AND main hospital electronic record (e.g. Clinical portal, Trakcare)

No
- If explainable, resolved and ECG is normal the patient can be discharged with alert to GP
- Document all on Badgernet via obstetric registrar AND main hospital electronic record (e.g. Clinical portal, Trakcare)

Additional messages

Make a diagnosis

! Seek to make a diagnosis, not simply exclude a diagnosis
! Obstetric specific early warning scores must be used to document observations in all pregnant women or those within 6 weeks post-delivery. The NHS Scotland Maternity Early Warning Score chart can be found at the following link: https://ihub.scot/media/6721/finalnational-mews-chart_web.pdf
! In the event of any deterioration in maternal condition, consultant review must be expedited.

Cardiac biomarkers

! *Troponin T – check only if indicated – follow local chest pain pathways to determine. Caution required with interpretation in pregnancy and therefore this should be done in conjunction with review by consultant cardiologist. A negative Troponin does not rule out all causes of chest pain. Do not simply discharge the patient with a negative myocardial infarction (MI) screen.
! *NTproBNP may be appropriate if hear failure suspected. This is not available in all hospitals. Request only on advice of consultant cardiologist. Caution required with interpretation of any result in pregnancy and therefore this should be done in conjunction with review by consultant cardiologist.

Treating acute presentations

! Electrical cardioversion is safe in all phases of pregnancy and is recommended for any woman with tachycardia with haemodynamic instability and for pre-excited atrial fibrillation.
! Imaging techniques involving radiation exposure e.g. X-ray and computed tomography (CT) should not be withheld from a pregnant patient if they are the most appropriate or readily available investigation for the diagnosis in question.
! Neither pregnancy, caesarean section birth or the immediate postpartum state are absolute contraindications to thrombolysis.

Key considerations during history taking

The following questions can assist in ascertaining the presence of 'red flags'

Shortness of breath

? When does symptom occur e.g. does it occur at rest, at night, on lying flat?
? Did the shortness of breath come on suddenly?
? How many pillows does the patient sleep with, and for what reason?
? Are there any associated symptoms e.g. chest pain, dizziness, fast heart rate/palpitation?

Chest pain

? When did the symptom occur e.g. at rest, during exertion? Was it sudden onset?
? What is the nature and severity of the pain e.g. are opiates required to control the pain?
? Does the pain radiate e.g. jaw, arm, shoulder, through to the back?
? Is the pain associated with any other symptoms e.g. nausea/ vomiting, haemoptysis, shortness of breath, dizziness, blackouts, new onset neurological symptoms/signs?

Palpitation

? When did the symptom occur?
? How long did it last? Was it >10 minutes?
? Do they have a history of cardiac disease?
? Do they have family history of cardiac disease at a young age (≤50 years)
? Is the feeling associated with any other symptoms e.g. pain, dizziness, syncope?

Blackout

? When did the blackout occur e.g. at rest, during exercise?
? Were there any obvious contributing factors e.g. heat, posture, emotional distress?

Family history of cardiovascular disease, sudden death, or blackouts?

? Ask about any cardiovascular disease (congenital, inherited or acquired) in relatives. Ask specifically about CVD in younger relatives (<50 years), relatives that died suddenly or who have had conditions such as aneurysms, dissection or required cardiovascular interventions e.g. surgery or cardiac implantable electronic devices (e.g. Implantable cardioverter defibrillator, pacemaker at young age)

SOCN SCOTTISH OBSTETRIC CARDIOLOGY NETWORK

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