Chest pain in pregnancy & early postpartum: Triage & assessment

NHS SCOTLAND

Red flags:

- ! Pain requiring opioids
- ! Pain radiating to arm, shoulder, back or jaw
- ! Sudden-onset, tearing or exertional chest pain
- ! Associated with haemoptysis, breathlessness, syncope or abnormal neurology
- ! Abnormal observations

! Obstetric specific early warning scores (MEWS) must be used to document observations in all pregnant women or those within 6 weeks post delivery

History taking

? When did the symptom occur? e.g. at rest, during exertion?
? Was it sudden in onset?
? What is the nature and severity of the pain e.g. stabbing, tight, sharp, dull, crusing or burnging. 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

Family history

? Family history of heart disease, sudden death or blackouts
? Ask about any cardiovascular disease (congenital, inherited or acquired) in relatives.
? Ask specifically about CVD in younger relatives (<50yrs), relatives that died suddenly or who have had conditions such as aneurysms, dissections or required interventions e.g. surgery or implantable cardiac devices (ICDs)

Investigations

ECG: all pregnant women presenting to triage with chest pain require an ECG. Consider repeating ECG in the context of increasing/continuous chest pain to check for dynamic changes

Troponin: marker of myocardial damage. Suitable for use in pregnant patients. May be raised in women with marked hypertension or pre-eclampsia. See local guidelines for the timing and interpretation of troponin results

Do not withhold necessary investigations because of concern about radiation exposure in pregnancy if they are the most appropriate or readily available investigation for the diagnosis in question

Chest X-ray: necessary to exclude pneumothorax, pneumonia, widened mediastinum & signs of fluid overload; or prior to V/Q scan

V/Q scan or CTPA: where there is suspicion of PE without symptoms or signs of DVT. CTPA should be used if CXR abnormal

CT aorta/chest: for evaluation of possible aortic dissection. ECG gated scan required

D-dimer: should not be used to exclude PE in pregnant patients.

Differential diagnoses

Consider and exclude these life-threatening causes of chest pain

Pulmonary Embolism

! Pleuritic chest pain
! Dyspnoea
! Symptoms/signs of DVT

Consider VTE risk factors
Risk of VTE 4-5x higher in pregnant women

Manage according to RCOG VTE in pregnancy guideline

Acute coronary syndrome

! Retrosternal pressure/tightness
! Can be associated with radiation to shoulders/arms/neck/jaw
! Crescendo in nature, related to exertion but can occur at rest
! Associated sweating, pallor

Risk increased 3/4 fold pregnancy

ECG and troponin required

Aortic dissection

! Severe tearing chest pain through to back
! May be associated with focal neurology, hypertension.
! Risk factors: Family history, Marfans Sydnrome, Ehlers Danlos syndrome, Turners Syndrome, Loeys-Dietz Syndrome, bicuspid aortic valve

Risk increases 25 fold in pregnancy

CXR: Widened mediastinum
ECG gated CT aorta required
ECG and troponin required

Pneumothorax / pneumomediastinum

! Pleuritic, sharp, positional, sudden onset
! Associated with breathlessness

Increased risk following vaginal delivery or excessive retching in hyperemesis gravidarum

CXR is the primary investigation

Other causes to consider:
Gastritis: Retrosternal, burning pain, associated with eating, worse lying down, common throughout pregnancy
Pneumonia: Chest pain is variable, may be pleuritic. Associated with cough, sputum, fever
Musculoskeletal: Sharp, aching, positional, pleuritic. Aggravated by movement, deep inspiration and coughing. Point tenderness on chest wall. Costal margin tenderness/costochondritis is common in pregnancy.

Management of chest pain

Ensure appropriate obstetric review
Chest pain requires a positive diagnosis – exclusion of pulmonary embolus is not sufficient
Seek senior review by relevant clinician if unsure of how to investigate, make a diagonosis and to develop management plan.
Patients who are clinically unstable require immediate consultant review & early HDU/ITU referral in the appropriate setting for their presentation (obstetric, medical or cardiac HDU/CCU/ICU)
Actively escalate care to the 'Pregnancy Heart Team' including discussion for urgent intervention if required (e.g. thrombolysis, percutaneous coronary intervention, cardiac surgery)
Access SOCN acute pathways document and further information at www.socn.scot.nhs.uk

SOCN SCOTTISH OBSTETRIC CARDIOLOGY NETWORK

Endorsed: 31 March 2026 **Review: 31 March 2029** **NSD610-025.09 V1**