

## Pericarditis - Acute - Full Clinical Guideline

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### Introduction

Pericarditis is a fairly common cause of chest pain. It is an important differential diagnosis for ST elevation on the ECG. Acute Pericarditis is defined as inflammation of the pericardial sac. This inflammation may result in a pericardial effusion.

**Diagnostic Criteria for Acute pericarditis** (at least of 2 of the 4 following criteria to be met for diagnosis)

- 1) Pericarditic chest pain (pleuritic, central, relieved by leaning forward)
- 2) Pericardial rub
- 3) New onset widespread ST elevation with PR depression (usually not following a territory like a STEMI would, Q waves do not develop although T wave inversion may. Usually <5mm, concave in shape)
- 4) Pericardial Effusion (new or worsening). Rarely this can cause signs of tamponade (tachycardia, breathlessness, raised JVP with Kussmals sign, oedema, pulsus paradoxus) and requires urgent echocardiogram

Other supporting features to aid in diagnosis are elevated inflammatory markers CRP, ESR and white cell count. Evidence of inflammation can also be found on cardiac CT scan and Cardiac MRI.

### Causes of Acute Pericarditis

Acute pericarditis aetiology can be classified in to 2 main classes

- a) Infectious causes secondary to viral (most common by far), bacterial, fungal or parasitic.
- b) Non- infectious causes are predominantly secondary to long term inflammatory conditions like autoimmune diseases, malignancy, uraemia, myxedema, trauma/iatrogenic or drug induced pericarditis (for patients who have been on chemotherapy, sulfa drugs etc.,). It can also occur post-MI (Dressler's syndrome).

Other pericardial diseases like neoplasm, pericardial tumours, inflammatory conditions should be considered for recurrent or chronic pericardial effusions.

### Investigations for diagnosis of Pericarditis

- A) ECG – widespread ST elevation with PR depression is often diagnostic of pericarditis
- B) Chest X Ray – Normal cardiac silhouette is seen most patients. If the pericarditis is associated with moderate to severe pericardial effusion this is evident on Chest X ray
- C) Trans thoracic echocardiogram (TTE) should be performed to rule out any pericardial effusion. The pericardium may appear bright. Arrange urgently if tamponade suspected clinically (discuss with on call cardiologist out of hours)

- D) Cardiac markers including creatinine kinase (CK) levels and troponin levels should be measured
- E) Inflammatory markers, FBC, U+E
- F) Consider rheumatoid factor and autoimmune screen or TB tests depending on clinical situation (especially if risk factors below are present). Viral titres are rarely helpful.

### **Risk stratification in acute Pericarditis**

Risk factors associated with a worse outcome include:

Temp >38

Subacute onset over a few days

Presence of an effusion > 2cm or tamponade

Minor risk factors include:

Presence of myopericarditis

Immunosuppression

Trauma

Anticoagulation

Presence of any 1 of these should indicate admission under cardiology (discussion with rheumatology, infectious diseases/resp or renal may be needed depending on likely aetiology)

Those with no risk factors and no indication of systemic inflammatory condition could be discharged to the GP with treatment as below and instructions to be reviewed by the GP at 7 days. Failure to respond to NSAIDs after 7 days also indicates a worse outlook and need to refer back to Cardiology.

### **Management of Pericarditis**

First episode of acute pericarditis:

1-2 week course of NSAID (e.g. Ibuprofen 600mg tds) with gastric protection (e.g. Lansoprazole) is appropriate.

Colchicine 500mcg bd or tds for 3 months may help prevent recurrence and is recommended if tolerated.

Longer or tapering courses can be considered for recurrent episodes, guided by CRP.

Patients should refrain from exercise until the CRP and ECG have normalized.

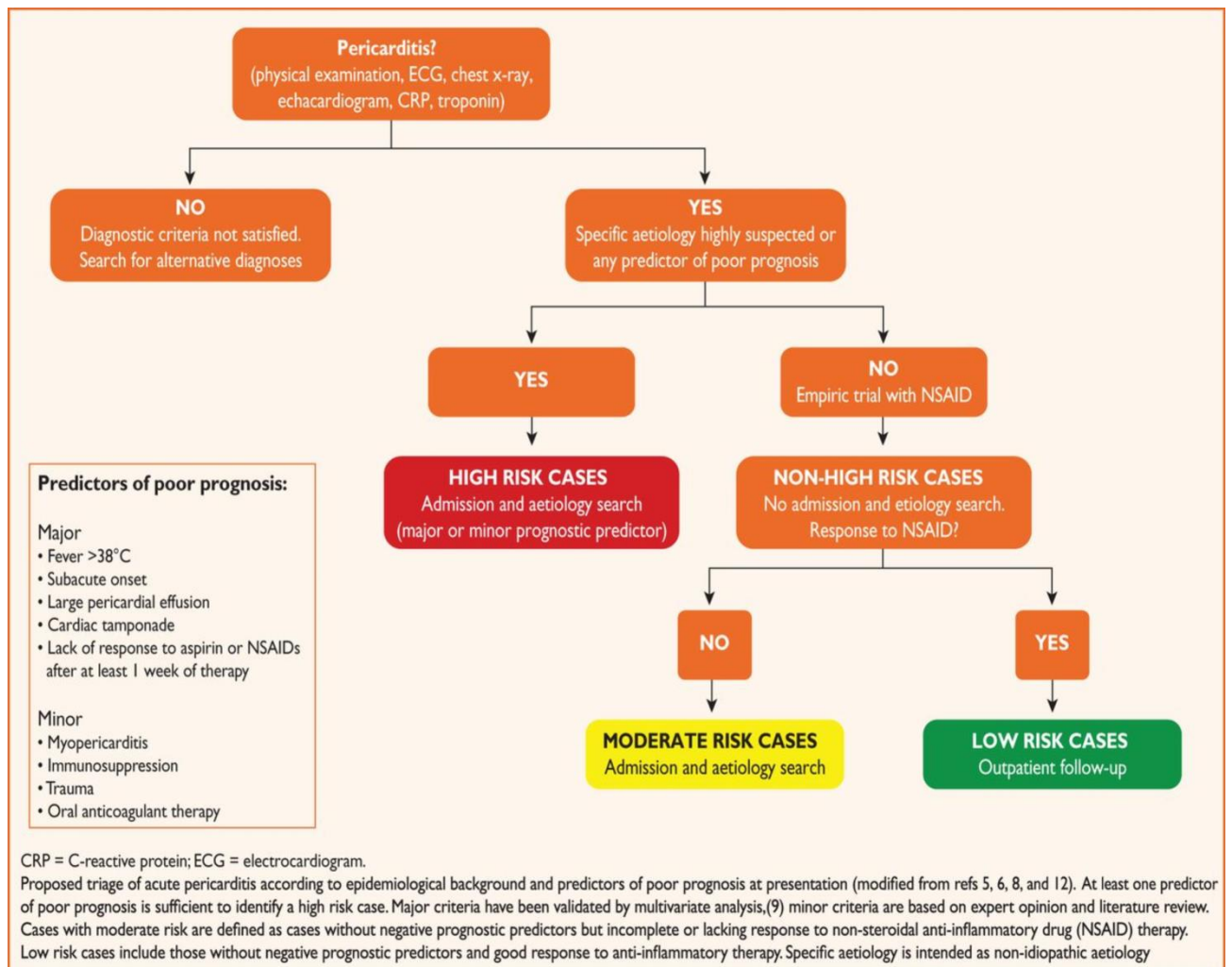
Corticosteroids (e.g. Prednisolone) should NOT be used first-line for acute pericarditis as there are observational data to suggest that although highly effective in relieving symptoms, subsequent withdrawal of steroids may be associated with unacceptably high rates of symptomatic relapse. Specialist advice should be sought before prescribing steroids for pericardial disease and infection must be excluded.

Other alternate causes of pericardial diseases including cardiac tamponade, recurrent/incessant pericarditis should be considered. Recurrent /chronic pericardial effusions need pericardial drain insertion along with consideration of pericardial window/ pericardiectomy in liaison with cardiothoracic surgeons.

## Flow chart for diagnosis and management of Pericarditis

### Acute Pericarditis Diagnostic criteria (at least 2 out of 4 should be met)

- 1) Pericarditic chest pain
  - 2) Pericardial rub
  - 3) New onset widespread ST elevation with PR depression
  - 4) Pericardial Effusion (new or worsening)
- Associated rise of inflammatory markers like ESR, CRP and white cells



**Management:**

Drug	Dose	Duration
Ibuprofen	600 mg every 8 hrs, with PPI	Weeks to months
Colchicine	0.5mg bd or 0.5mg od if intolerant to higher doses or if weight < 70Kg	3-6 months
Prednisolone (if above fail, specialist initiation)	1 mg/Kg/day (high doses) 0.25 to 0.5mg/Kg/day	Gradual tapering of doses required

Note: Tapering of doses to be done guided by CRP levels and clinical symptoms.

Further alternative diagnosis for pericardial diseases to be investigated including malignancy, pericardial tumors, drug induced pericardial effusions.

**References:**

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4. *ESC guidelines on pericardial disease management 2015*

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