

Acute pericarditis is defined as the one that is **less than two weeks** in duration. Diagnosis is based on at least

**2** of the following 4 criteria:

- 1: Characteristic chest pain
- 2: Pericardial rub
- 3: ECG changes
- 4: Echo: new or worsening pericardial effusion

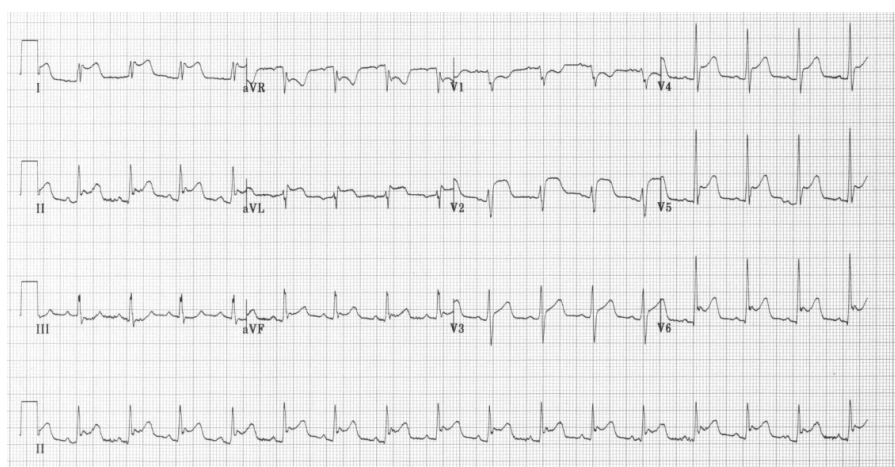
**ECG is** the most important investigation for acute pericarditis.

ST segment is **elevated** with the **concavity** upwards.

ST segment elevation is seen in **all leads** except aVR and V1 (**Panel**).

**PR** segment is depressed (This is the feature we have highlighted in our case).

**T wave inversions** occur after the ST segment comes down to baseline.



The above ECG of another patient which shows diffuse ST segment elevation in all the leads except V1 and aVR. The ECG changes may evolve over 4 stages:

- Stage 1: ST elevation with PR depression,
- Stage 2: Normalisation of the ST segment.
- Stage 3: T inversions and
- Stage 4: Normalisation.

Nowadays with treatment, these ECG changes may not evolve through all the stages. It may evolve from stage 1 to 4 directly.

The most important differential diagnosis of ST elevation is between Myocardial Infarction and Pericarditis. These differences are given in the table 1.

**Differential diagnosis of ECG in acute pericarditis versus acute ST elevation infarction**

	<b>Pericarditis</b>	<b>STEMI</b>
<b>ST elevation</b>	Concave upward	Convex upward
<b>Leads</b>	All leads except aVR and V1	Region wise inferior / anterior
<b>Evolution of ST and T</b>	ST is elevated for several days. T inversion after ST returns to baseline	T inversion within a few hours, while ST is still elevated
<b>PR depression</b>	Yes	No

## TREATMENT

Idiopathic pericarditis is a self-limiting disease. Hence the treatment needs to be supportive.

Non steroidal anti-inflammatory drugs (NSAID's) are preferred. Ibuprofen or indomethacin can be used.

If symptoms do not resolve with NSAID then Colchicine can be added to the above regimen and given for 3 months, reduces the recurrence rates considerably (COPE trial). The usual dose is 2 mg on the first day followed by 0.5 mg twice daily for 90 days.

For patients who are not responding, a short course of steroids may be used. Lower doses of prednisone (0.5 mg /kg) is preferred. Use of higher doses of prednisone (1.0 mg per kg) for recurrent pericarditis is associated with more side effects, recurrences, and hospitalisations. If steroids are used they should be given for a period of at least one month before tapering.

## REFERENCES

- 1: Lange RA, Hills David L. Acute Pericarditis. *NEJM* 2004; 351:2195-202.
- 2: Spodick DH. Diagnostic electrocardiographic sequences in acute pericarditis. Significance of PR segment and PR vector changes. *Circulation* 1973; 48:575-80.
- 3: Masud H, Khandaker K, Raul E. Pericardial diseases: *Mayo Clinical Proceedings*. 2010; 85:572-93.
- 4: Spodick DH. Acute pericarditis: current concepts and practice. *JAMA* 2003; 289:1150-3.
- 5: Massio Imazio, Marco Bobbio, Enrico Cecchi et al. Colchicine in addition to conventional therapy for acute pericarditis. *Circulation* 2005; 112:2012-6.
- 6: Massio Imazio, Brucato Antonio, Davido Cummeti et al. Corticosteroids for recurrent pericarditis. *Circulation* 2008; 118:667-71.