

Acute Pericarditis

Introduction

- Pericardium has 2 layers i.e. visceral and parietal pericardium.
- Abnormalities can be from inflammation, ↑ pericardial effusion, fibrosis or calcification.
- Acute pericarditis is an inflammation of the pericardial sac, with or without pericardial effusion.
- Acute pericarditis was the diagnosis in 5% of non-ischemic chest pain in ED.
- More common in male (OR 1.8) at younger age (circ 2014;130:1601).
- The in-hospital mortality rate is 1.1%.

Presentation

Clinical	Characteristic	Prevalence (%)
Chest pain [‡]	• Sharp, pleuritic, front to back, improved with sitting up	95
pericardial rubs [‡]	• Friction noise, ↑ with lean forward • Found all 3 phrases in 50 of patients (Am J Cardiol 1975;35:357)	80-90
ECG changes	• Highly variable, 4 phases 1 st Hours to day: Diffused, concave ST-elevation [‡] PR depress 2 nd Week: Normalization of ST, PR 3 rd Weeks: T wave inversion 4 th Resolved: Normalization of TWI	60
Pericardial effusion [‡]	• Mostly small, 3% tamponade (jacc 2004;43:1042) • 40% has no effusion	60
Potential investigation	• ↑ CRP, ↑ ESR • ↑ Troponin (in 1/3 of patients, see myopericarditis) • CBC, B/C, TB test, ANA, HIV • CXR (↑CT ratio if large effusion) • TTE, CT, MRI	

[‡] need 2 from 4 for diagnosis; ESC 2015 guideline for pericardial disease

- Pericardiocentesis: Low yield for Dx. May consider for Rx in tamponade or large effusion, or comprehensive work up e.g. cytology, tumor marker, gram stain, culture, PCR TB.

Etiology

Cause	Circ 2007; 115:2739. (n = 453 in Italy)	
Idiopathic	83%	Most cases are in determined causes. Possible viral e.g. enterovirus (coxsackie), herpes (EBV, CMV, HHV-6), HIV (pre-HAART), etc.
Autoimmune	7%	SLE, RA
Neoplasm	5%	Metastatic
TB	4%	(may more common in developing country)
Others specific causes	17%	Uremic, trauma, drug, other bacteria

Treatment

- Most patients (> 80%) can be treated as an outpatient. (jacc 2004;43:1042)
- High risk marker: (circ 2007;115:2739)
 - Elderly, fever, large effusion (>2cm on TEE), tamponade, immunocompromise, h/o VKA, trauma
 - Lack of response to NSAIDs
 - Perimyocarditis (↑troponin)
- Treat underlying cause if possible
- Pharmacologic therapy:

High doses NSAIDs	Colchicine	Steroids
class I, level A	class I, level A	class IIa, level C
<ul style="list-style-type: none"> • Ibuprofen 600-800 mg q 6-8 hr • Indomethacin 25-50 mg q 8 hr • ASA 650-1000 mg q 8 hr (prefer in post MI) 	<ul style="list-style-type: none"> • 0.5 mg daily or bid 	<ul style="list-style-type: none"> • Prednisone 0.25-0.5 mg/kg/d
<ul style="list-style-type: none"> • Duration 1-2wks or until resolution of symptoms • Serum CRP may help guide duration of treatment (circ 2011;123:1092). 	<ul style="list-style-type: none"> • Add to NSAIDs to ↓ symptoms, ↓ recurrent (COPE circ 2005, ICAP nejm 2013) • Duration 3 - 6 months • ↓ postpericardiotomy syndrome 	<ul style="list-style-type: none"> • In patient with refractory or contraindicate to NSAIDs or colchicine. • Associate with ↑ recurrent pericarditis (OR 4.3). • Prefer in autoimmune disease, uremic etiology

* consider exercise restriction (rec IIa level C) and GI prophylaxis

Recurrent pericarditis

- 30-40% of patients will have recurrent pericarditis
- Most common in autoimmune etiology
- May from inadequate initial treatments
- Can be decreased to 10-15% with colchicine (HR 0.4)
- Consider repeat NSAID with 6-month of colchicine
- Avoid steroid if possible
- In severe cases, consider Intrapericardial steroid, immunosuppression (IVIg, anakinra, AZA), or pericardiectomy.
- Even with recurrent pericarditis, the prognosis is still excellent.

Recommend reading

- Clinical profile and influences on outcomes in patients hospitalized for acute pericarditis. Circ 2014;130:1601.
- Indicators of poor prognosis of acute pericarditis. Circ 2007;115(21):2739.
- 2015 ESC Guidelines for the diagnosis and management of pericardial diseases. Eur Heart J 2015;36:2921.

Pericardial disease

- acute pericarditis
- pericardial effusion
- cardiac tamponade
- constrictive pericarditis
- pericardiotomy syndrome
- etc.