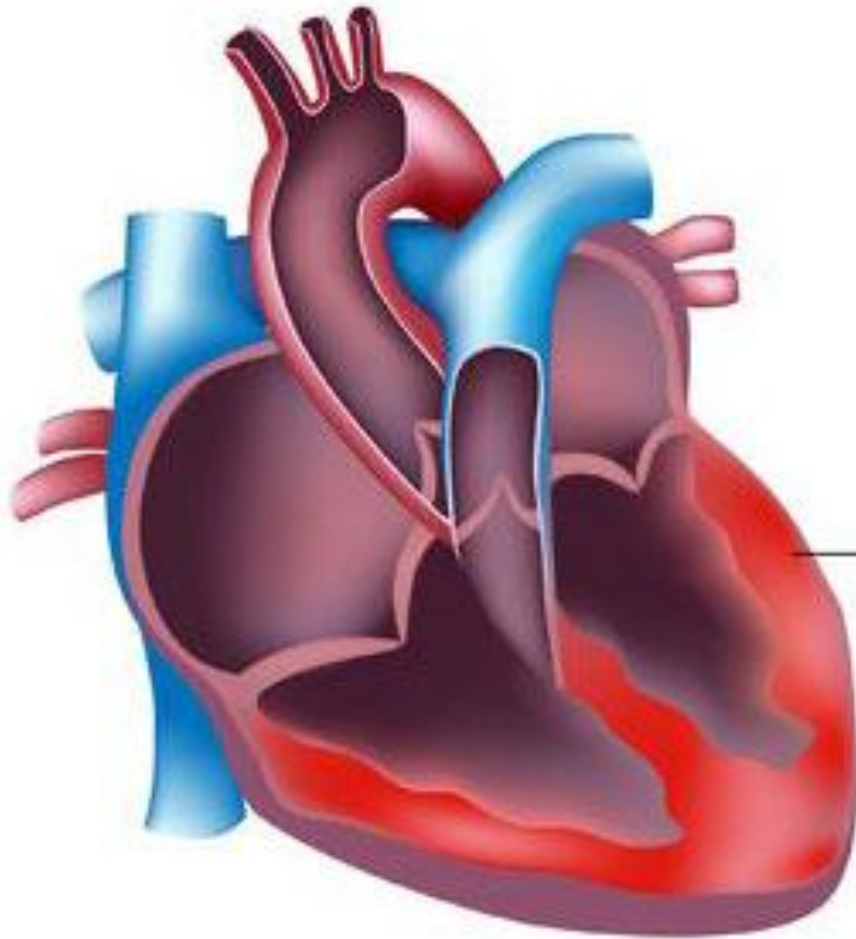


# MIOCARDITA



# Myocarditis



Inflammation of  
heart muscle

# Definitie

- Miocardita reprezinta o inflamatie a muschiului inimii.



## ➤ Prevalenta

- Miocardita acuta severa, rara
- Miocardita subacuta mai frecventa

## ➤ Etiologie:

- Adenovirus, Coxsackie, Echovirus
- Rujeolic, Rubeolic, Polio, CMV, HIV, Influenza
- Rar: bacterii, ricketsii, fungi, protozoare, paraziti
- Boli imun mediate: RAA, Kawasaki(vasculita)
- Boli de colagen
- Toxice: medicamente, exotoxine difterica

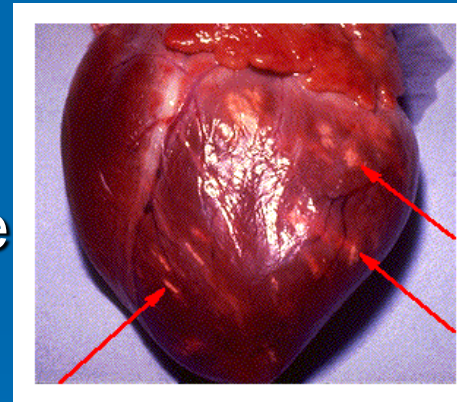
# Patogenie

## ➤ Patogenie:

- Reactie imunologica mediata celular la contactul cu virusul

## ➤ Macroscopic:

- Miocardul este pal, cu zone de cicatrizare



## ➤ Microscopic:

- Infiltrat de mononucleare si eozinofile in faza acuta
- Infiltrat cu celule gigante in faza tardiva

## Acute Phase

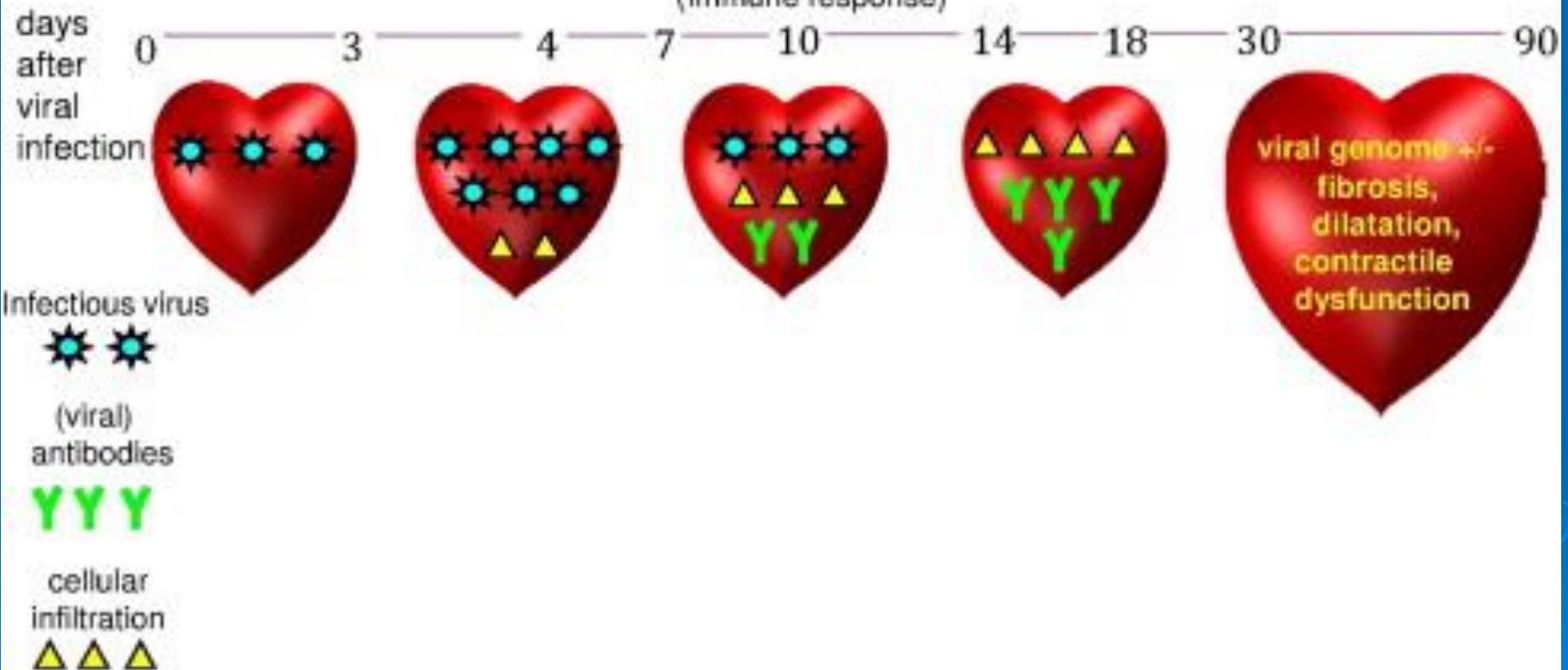
(Virus replication)

## Subacute Phase

(Immune response)

## Chronic Phase

(Dilated cardiomyopathy)



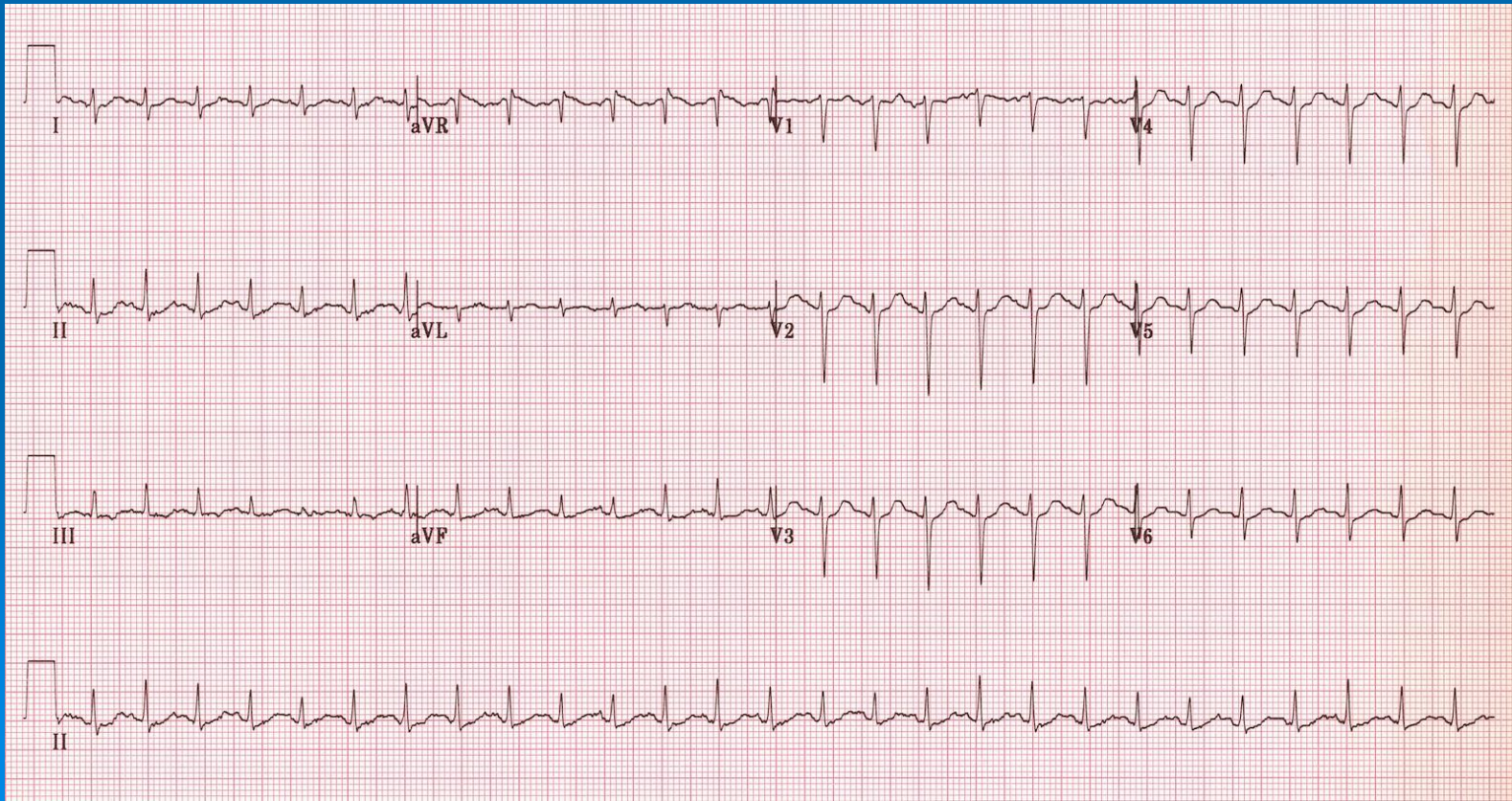
# Tablou clinic

- Istoric de IACRS
- Debut acut la sugar si nn cu semne IC:
  - Varsaturi, anorexie, letargie, soc circulator
  - Tahicardie, galop, tahipnee, aritmii
  - Suflu sistolic nespecific
  - Hepatomegalie



# ECG

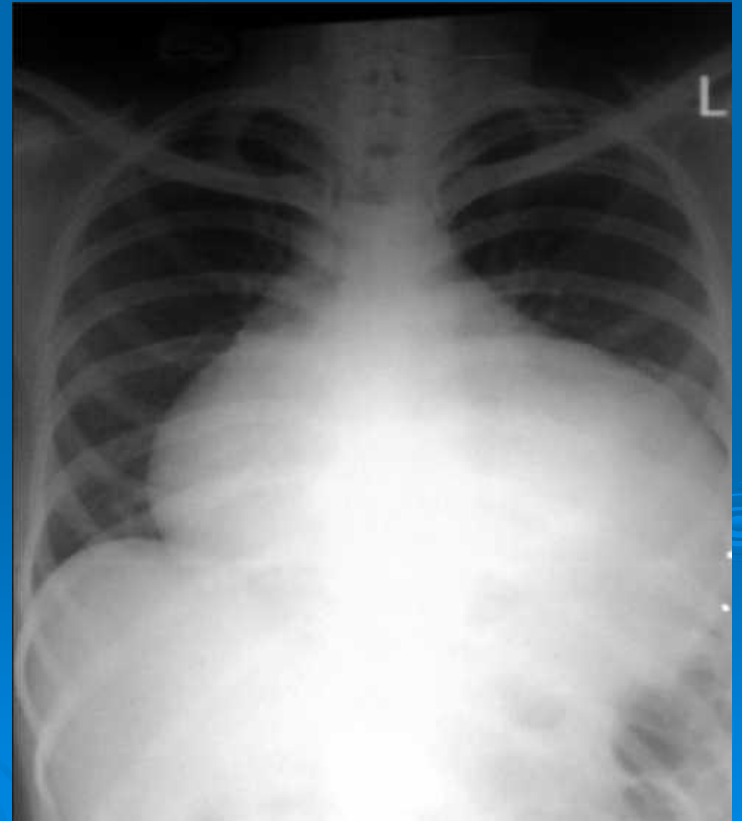
- Hipovoltaj QRS
- Modificari ST-T
- Alungire PR si QT
- Aritmii: ESA, ESV, tahicardie





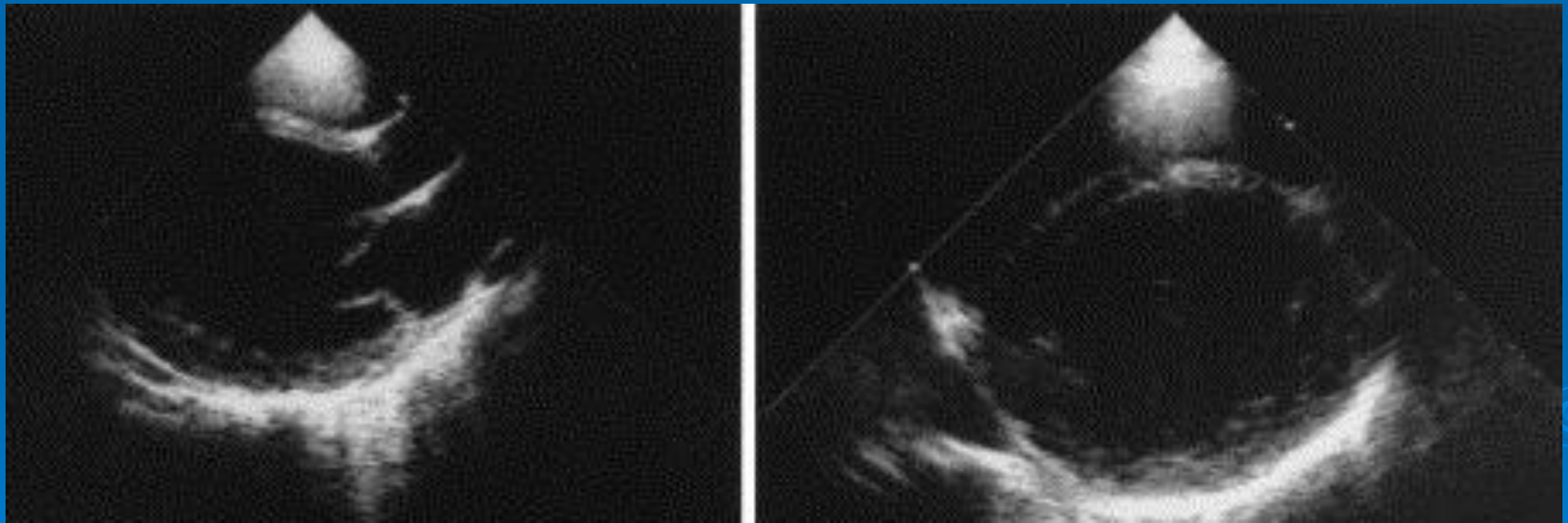
# Rx cp

- Cardiomegalie de diverse grade
- Unghi cord-diafragm obtuz,
- “CORD FLASC”, “cade pe diafragm”



# ECHOCARDIAC

- Dilatare de cavitati
- FE scazuta
- Trombi



Dilatare

# Paraclinic

- Laborator **BIOMARKERI CARDIACI**
  - Troponina T si I crescute
  - CPK si CK-MB crescute
  - Identificare virala prin testare IgM
- **RMN cardiac – evidentiaza leziunile miocardice si monitorizeaza evolutia lor**
- Biopsie endomiocardica
  - Confirma dg in cazul necesitatii de transplant de cord

# Tratament

- Repaus la pat, fara efort fizic
- Medicamentos - anticongestiv:
  - Diuretic: **Furosemid**
  - Soc: **Dobutamina, Dopamina**
  - Inhibitor ACE – **Captopril**
  - Aritmii – **Amiodarona IV**, tratament agresiv
  - **IGIV** – imunoglobulina intravenos 2 g/Kg in 24 ore
  - **Corticoterapia** – de evitat, favorizeaza replicarea virala
  - **Terapie specifica**: antitoxina – ex. miocardita difterica

**Active myocarditis**

**Follow-up**

**Virus ⊖  
Inflammation ⊖**

**Healed myocarditis/  
dilated cardiomyopathy**

**No specific therapy**

**Virus ⊖  
Inflammation ⊕**

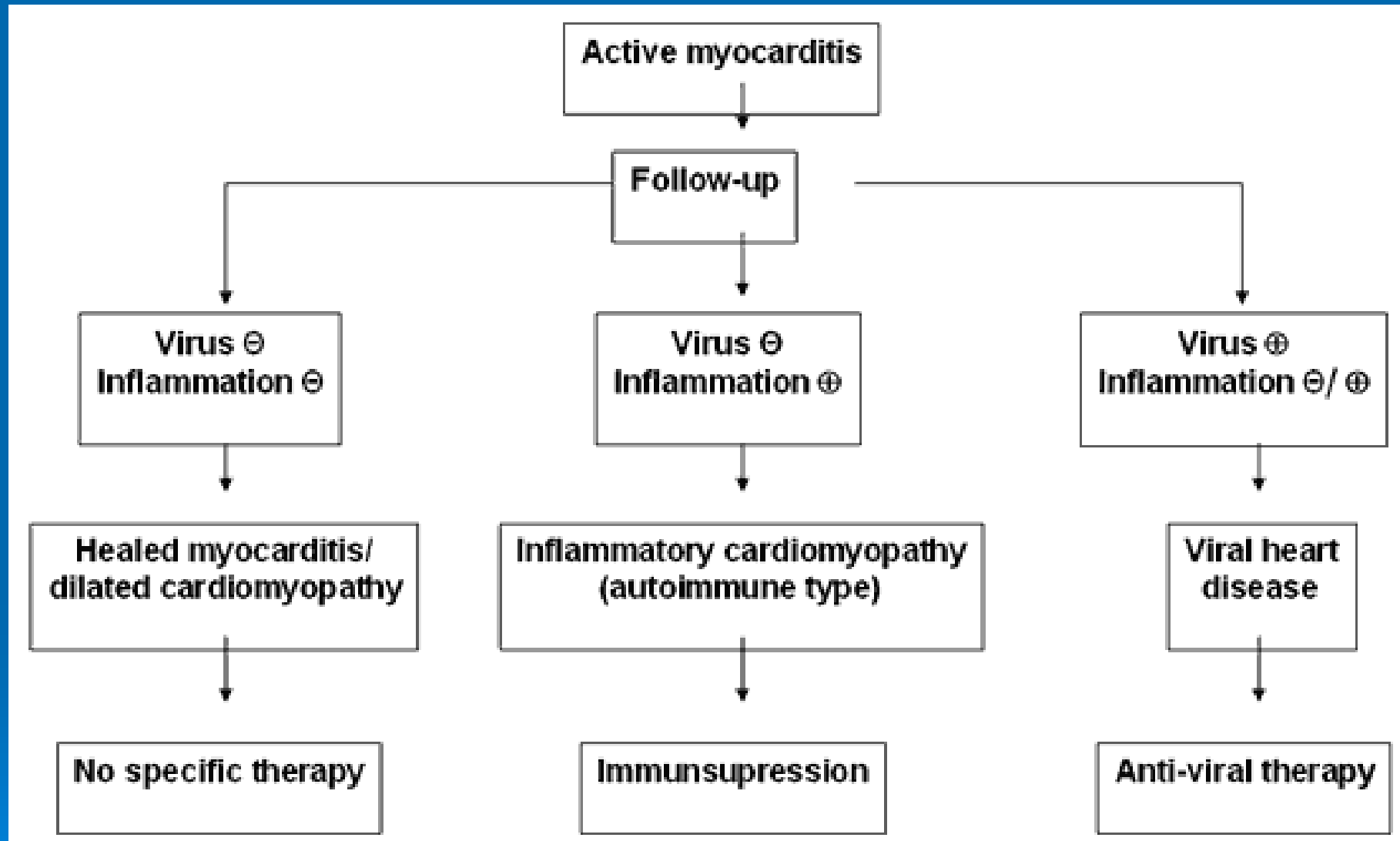
**Inflammatory cardiomyopathy  
(autoimmune type)**

**Immunosuppression**

**Virus ⊕  
Inflammation ⊖/⊕**

**Viral heart  
disease**

**Anti-viral therapy**





# Recuperare

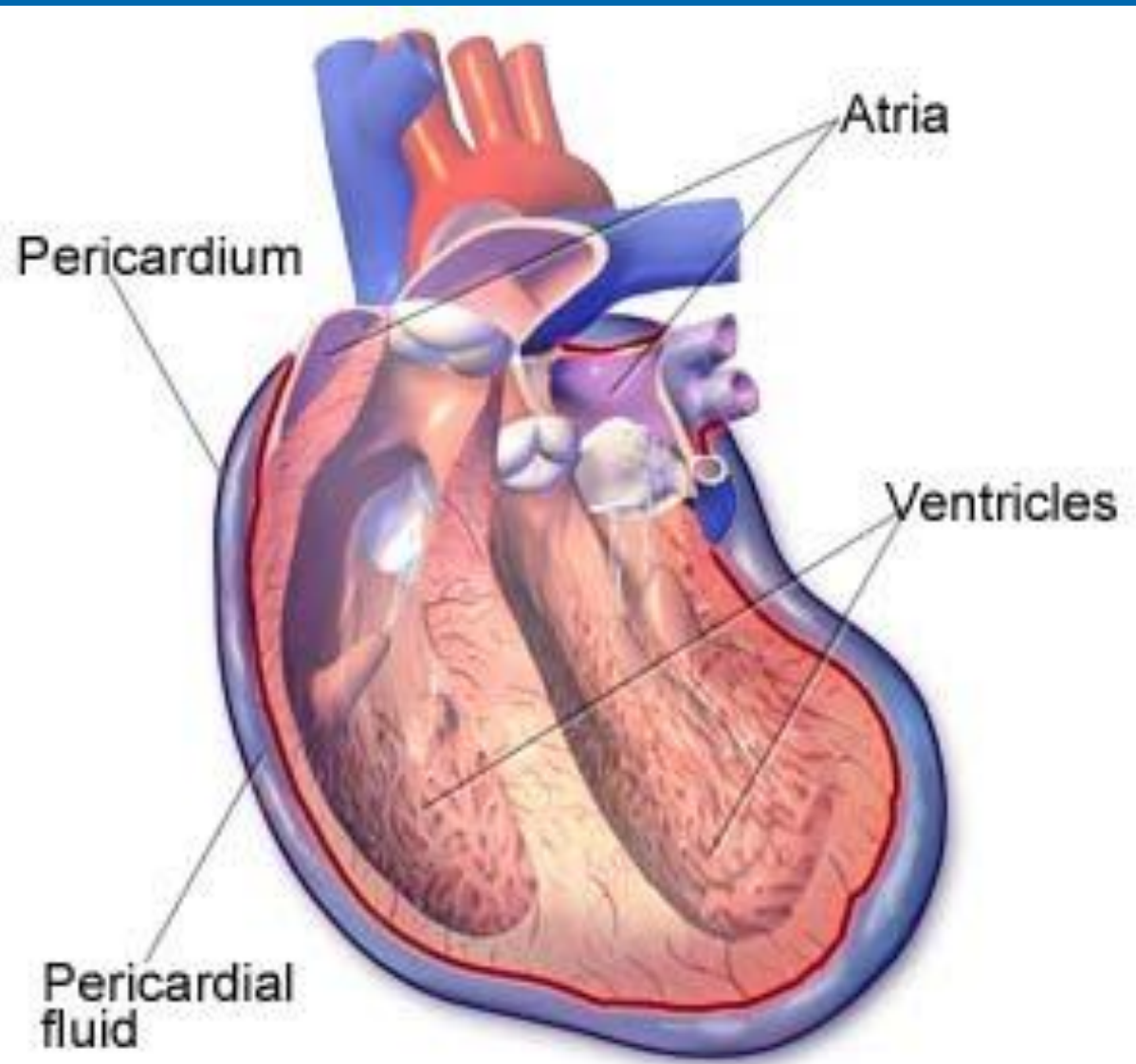
- Dupa miocardita acuta se recomanda repus la domiciliu 1 luna
- Reluarea activitatii normale se face gradat.
- Nu se practica efort fizic minim 6 luni.
- **Se repeta RMN cardiac la 6 luni**
- **; daca exista leziuni nu va practica sport pana la 1 an.**
- Daca leziunile sunt minime sau nu sunt, poate incepe activitatea sportiva gradual, in limita tolerantei fizice.

# PERICARDITA



# Definitie

- Pericardita reprezinta inflamatia foitelor pericardului.
- Acestea sunt 2:
  - Foita viscerală si foita parietală
- Inflamarea foitelor da **pericardita uscata**
- Intre foite se poate acumula lichid si aceasta se transforma in **pericardita exudativa sau lichidiana.**



Inflammation of the Pericardium in the Heart

# Etiologie

- Infectii virale
- RAA
- Infectii bacteriene:
  - Stafilococul Aureus,
  - Streptococcus Pneumonie,
  - Haemophilus Influenzae,
  - Neisseria Meningitidis,
  - Streptococul
- Tuberculoza
- Chirurgia cardiaca: Sindromul postpericardiotomie
- Boli de collagen
- Afectiuni oncologice
- Uremia



# Fiziopatologie

- Pericardita uscata
  - Inflamatie foitelor pericardice
- Pericardita lichidiană
  - Acumulare de lichid între foitele pericardului



# Fiziopatologie

Depinde de:

- **acumularea de lichid**
  - **Rapida** - modificari circulatorii severe
  - **Lenta in cantitate mica** – adaptare miocardica
  - **Lenta in cantitate mare - tamponada**
- **competenta miocardului**

Mecanisme compensatorii in tamponada:

- **Constrictie venoasa si pulmonara**
  - Imbunatateste umplerea diastolica
- **Creste rezistenta vasculara sistemica**
  - Nu permite scaderea TA
- **Tahicardie**
  - Imbunatateste cardiac output

# Morfopatologie

- Pericardul visceral si parietal e inflammat, cu foitele ingrosate.
- Lichidul pericardic e:
  - Serofibrinos
  - Hemoragic
  - Purulent
- Lichidul:
  - Se rezoarbe complet
  - Se ingroase foitele si determina constrictie cronica = pericardita constrictiva

# Tablou clinic

- Istoric de IACRS
- Precordialgii accentuate la aplecare in fata
- Febra peste 38.5 grade C
  
- **EO**
  - Freccatura pericardica in pericardita uscata
  - Zgomote cardiace asurzite in pericardita lichidiana
  - Tahicardie
- Tamponada - se mai adauga:
  - Hepatomegalie
  - Distensie jugulara
  - hipoTA

# Paraclinic

## ➤ ECG:

- Hipovoltaj QRS, cu modificari pe stadii
- **Stadiul I** - Supradenivelare ST – cu exceptia aVR, V1, DIII
- **Stadiul II** - Pseudonormalizare
- **Stadiul III** - Revenire segment ST cu inversare unda T
- **Stadiul IV** - Normalizare, dupa 2-4 saptamani de la debut



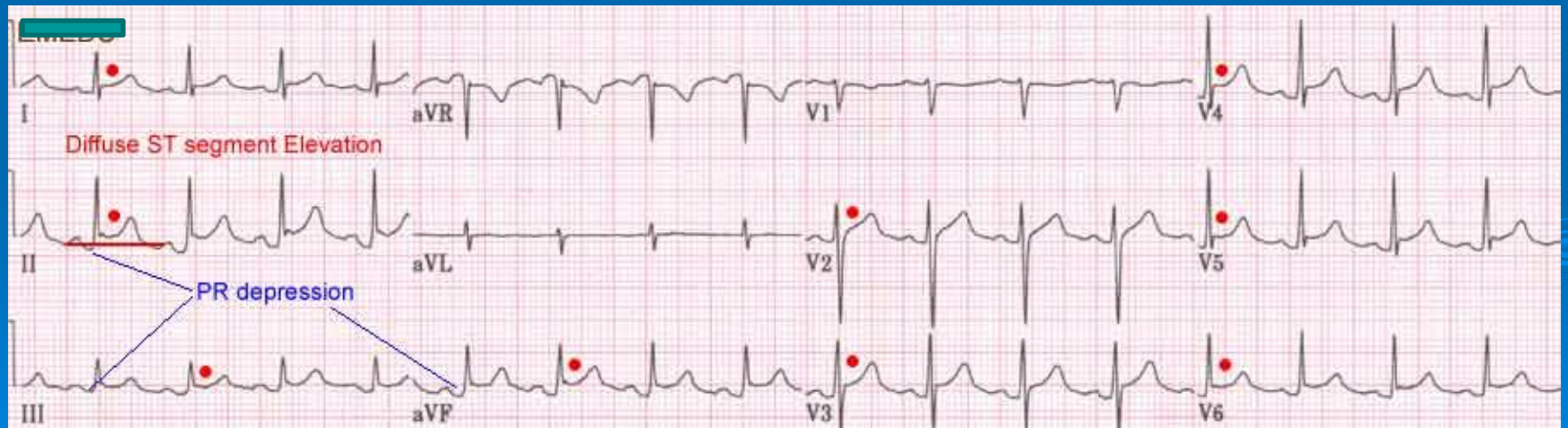
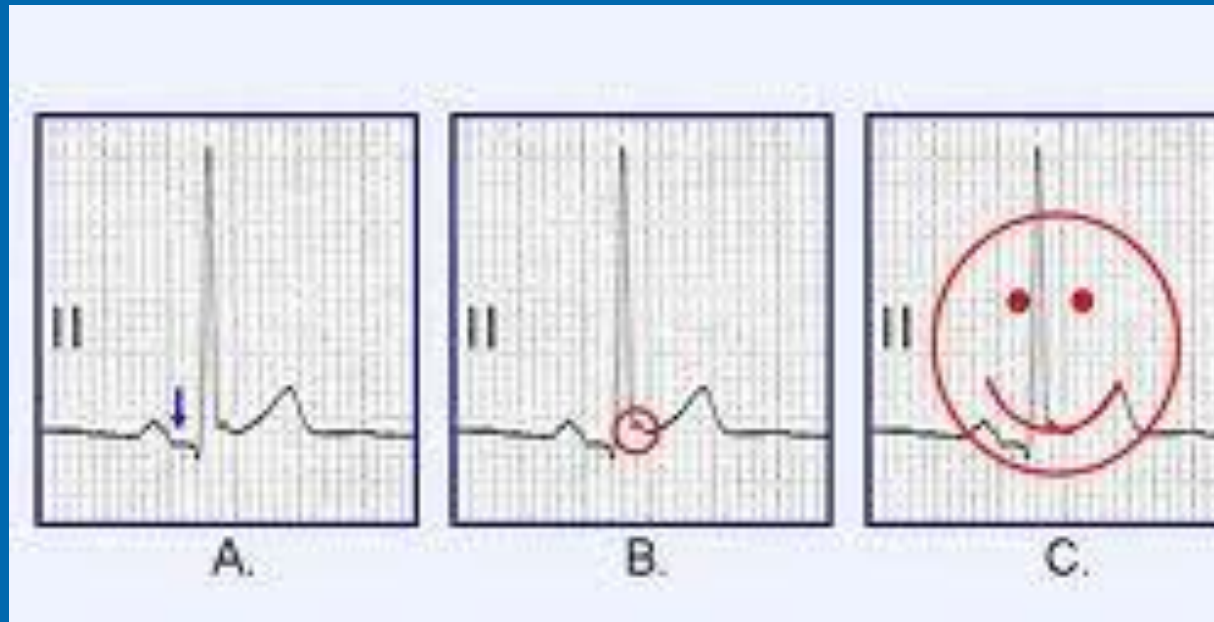
I

II

III

IV



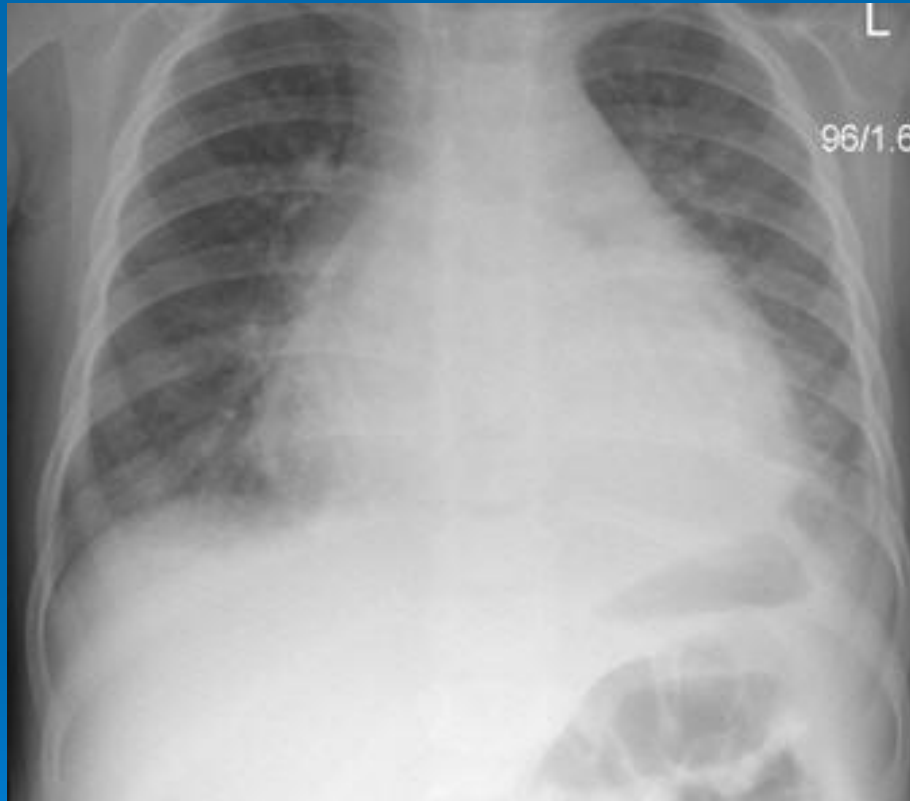


# Rx cardiopulmonar

- Cardiomegalie
- Unghi intre cord si diafragm **ascutit**
- “CORD IN CARAFA”



# Rx cardiopulmonar



Cardiomegalie

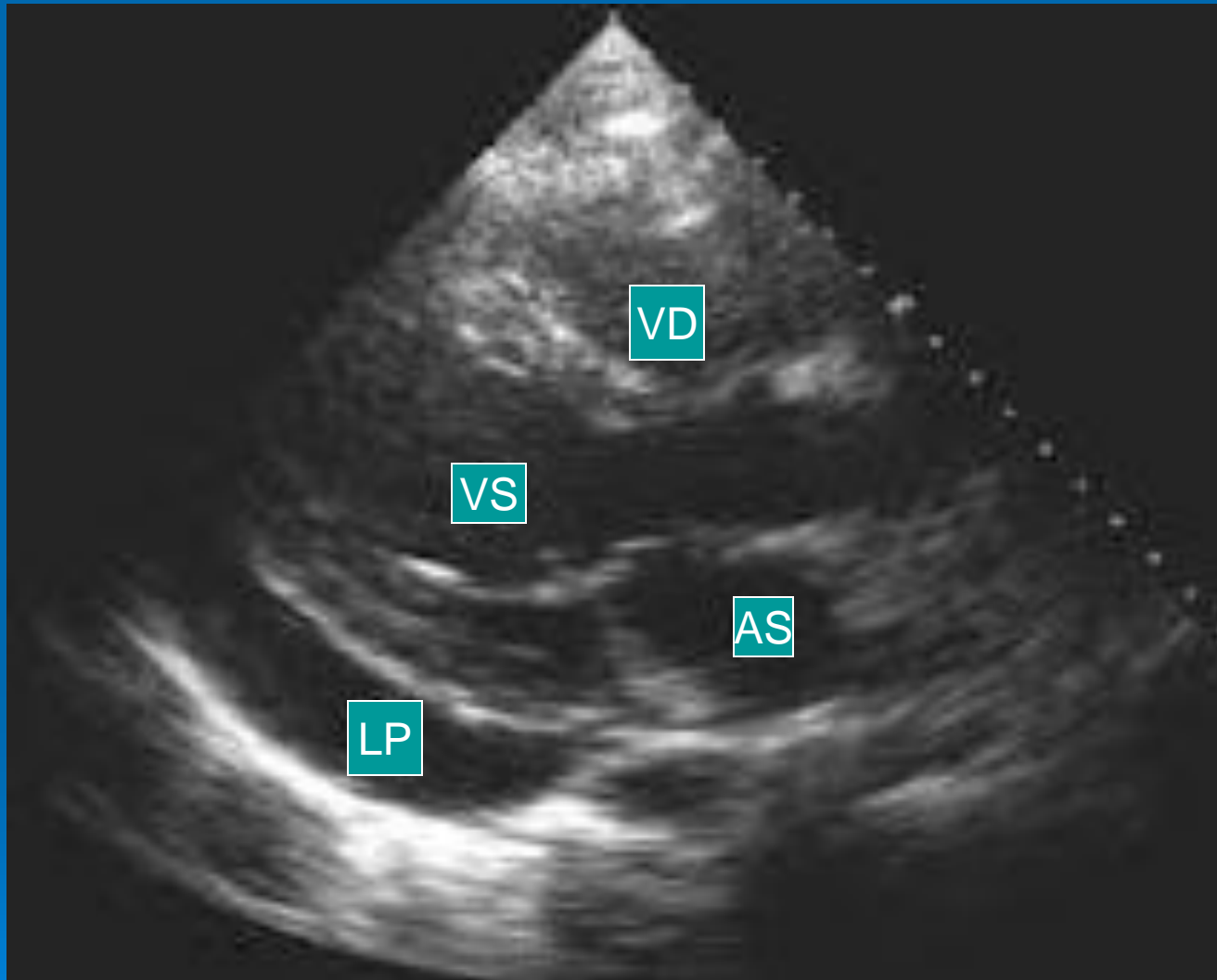


Cord in "carafa"

# Paraclinic

## Echocardiografie:

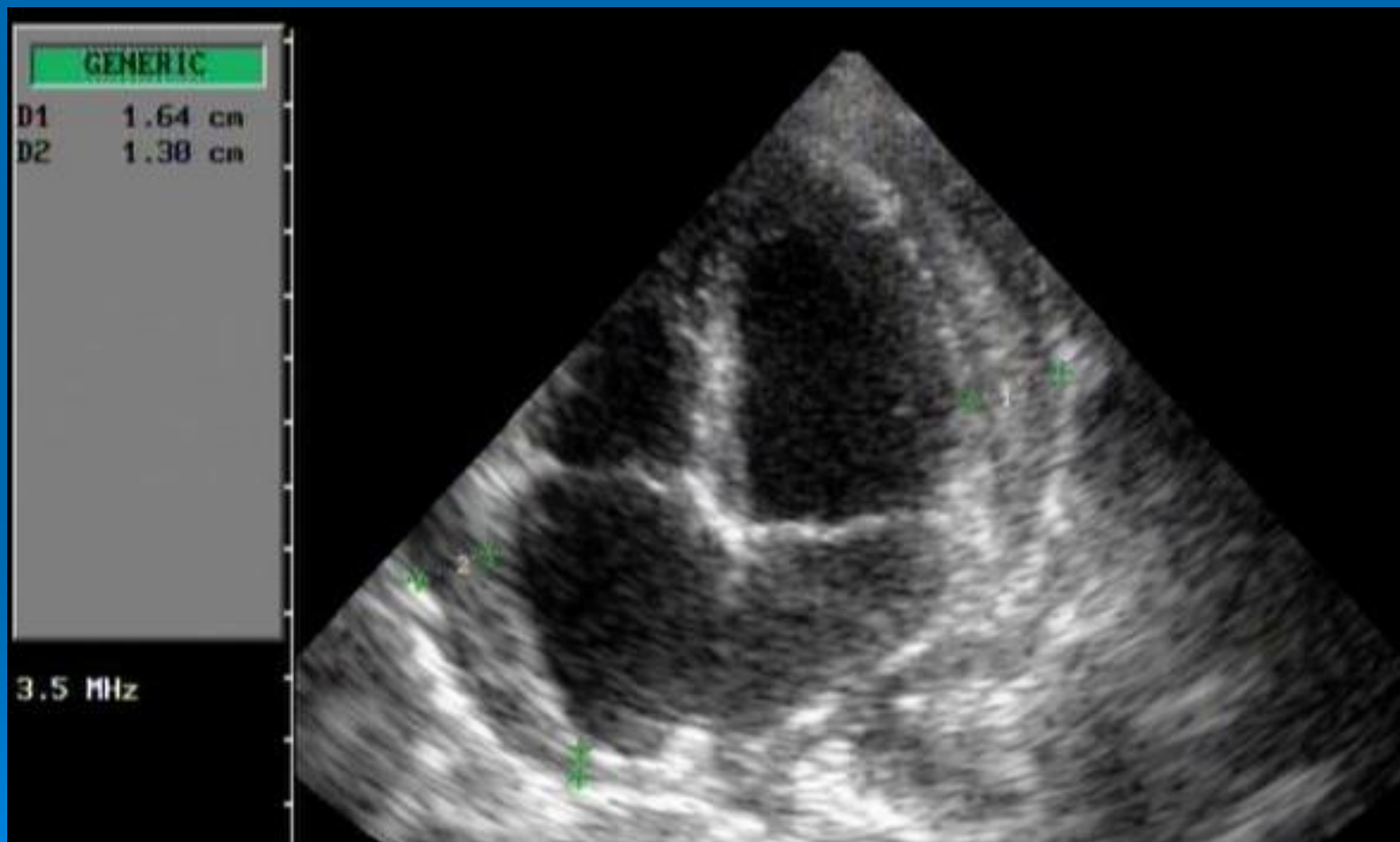
- Lichid pericardic doar in sistola = normal
- LP in cantitate mai mare - apare anterior si posterior
- Daca LP este vechi, apar benzi de fibrina
- Tamponada pericardica:
  - LP inconjoara cordul
  - Colabare AD in diastola
  - Colabare VD
  - “Swinging heart”



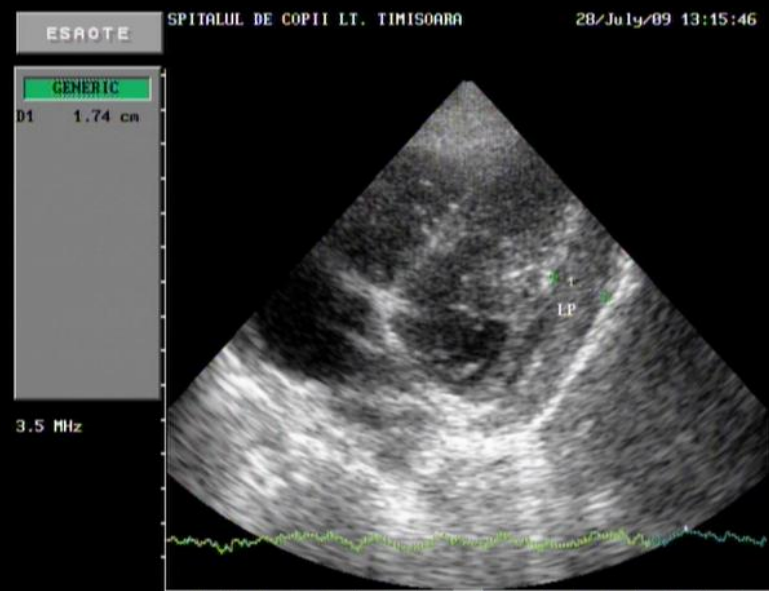
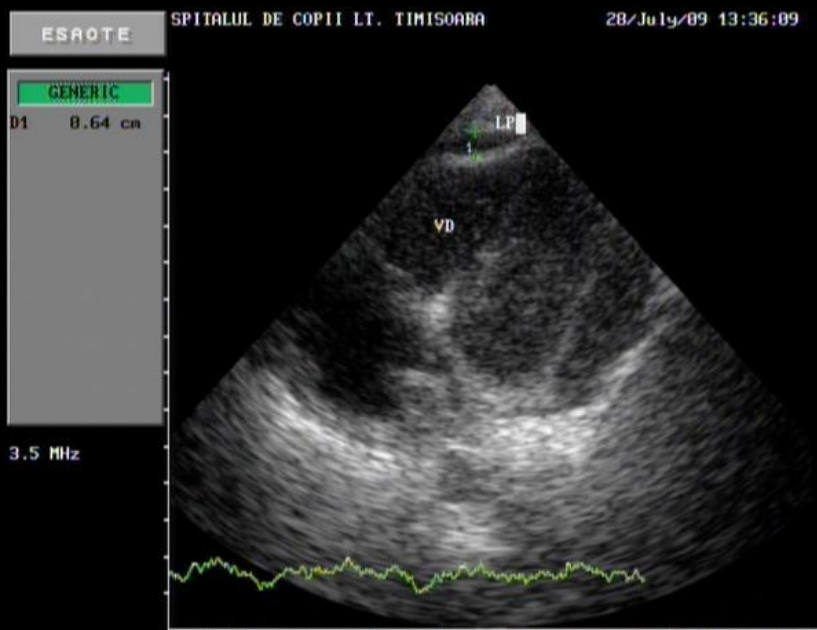
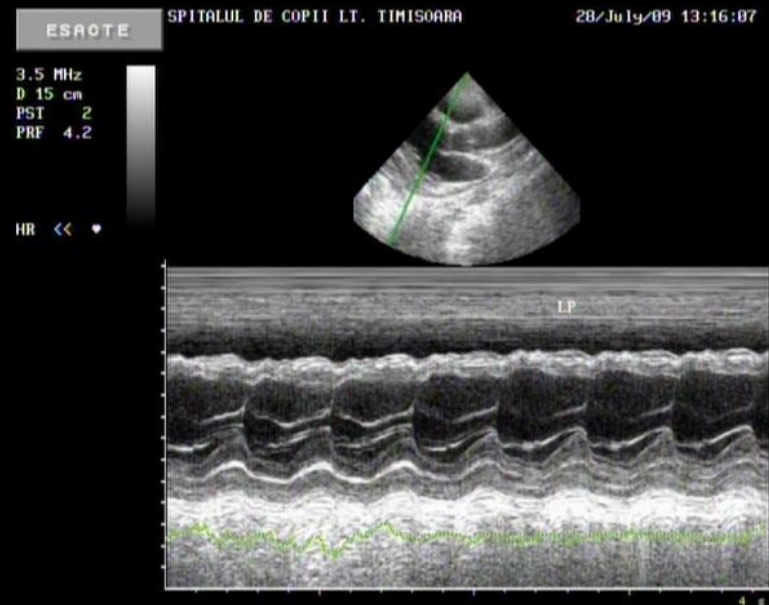
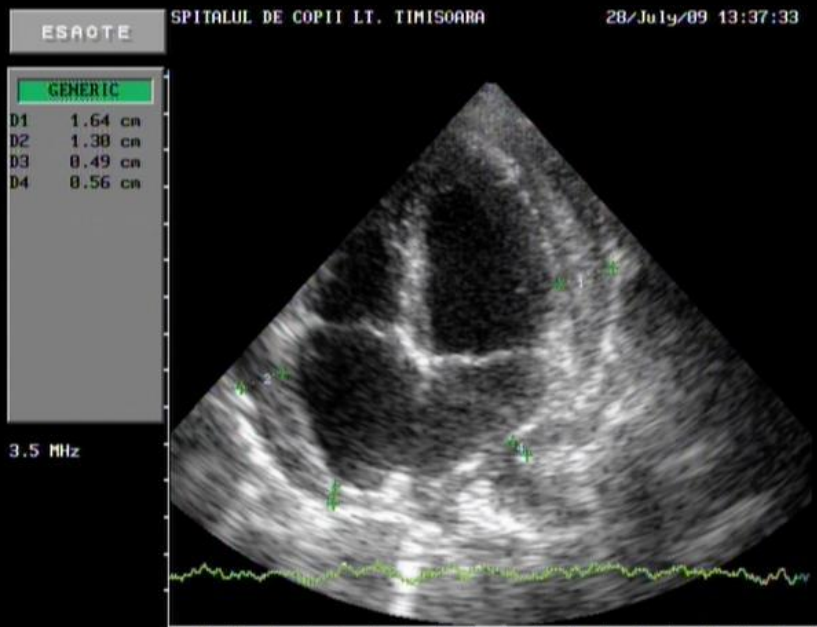
LP = lichid pericardic



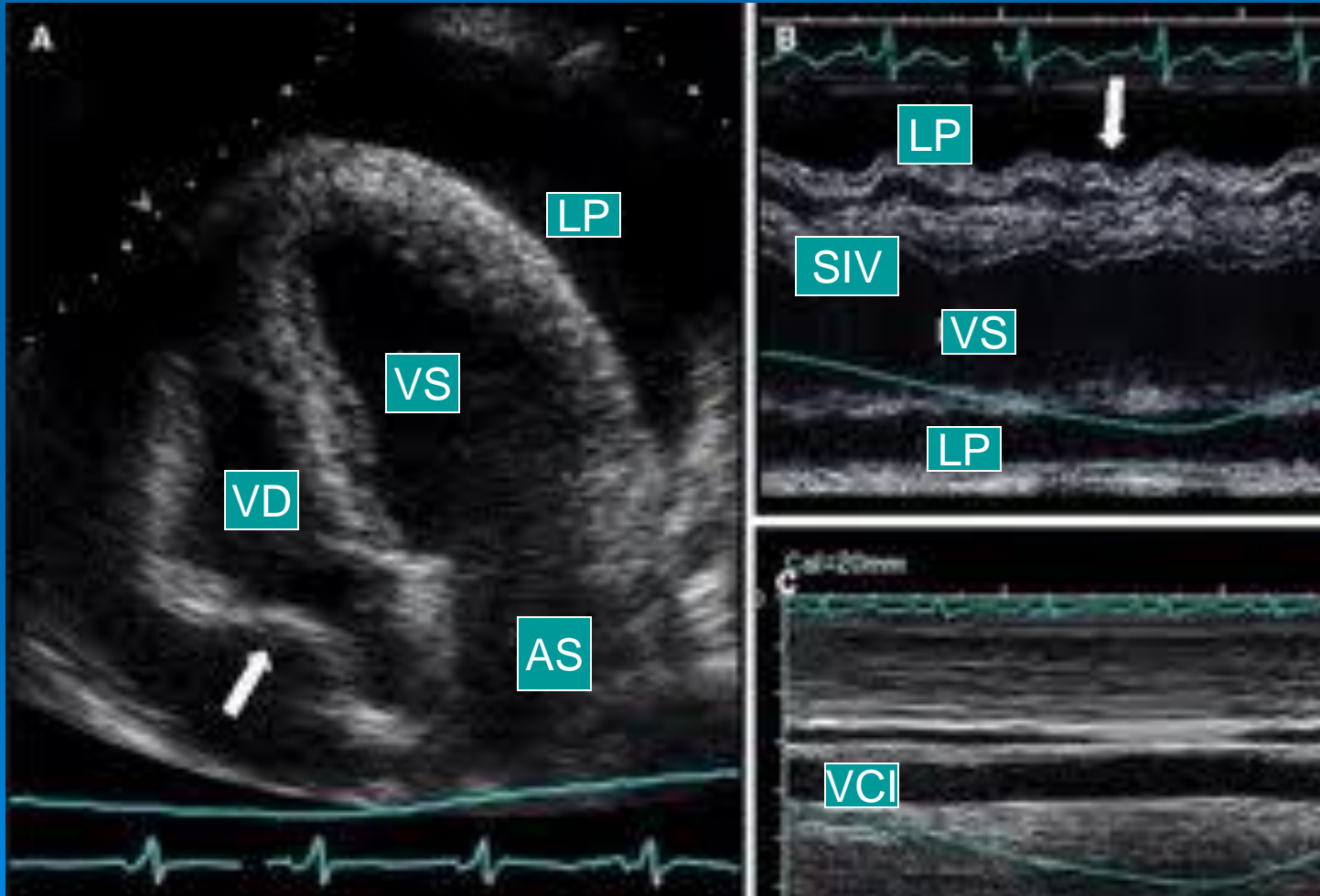
# Pericardita lichidiană



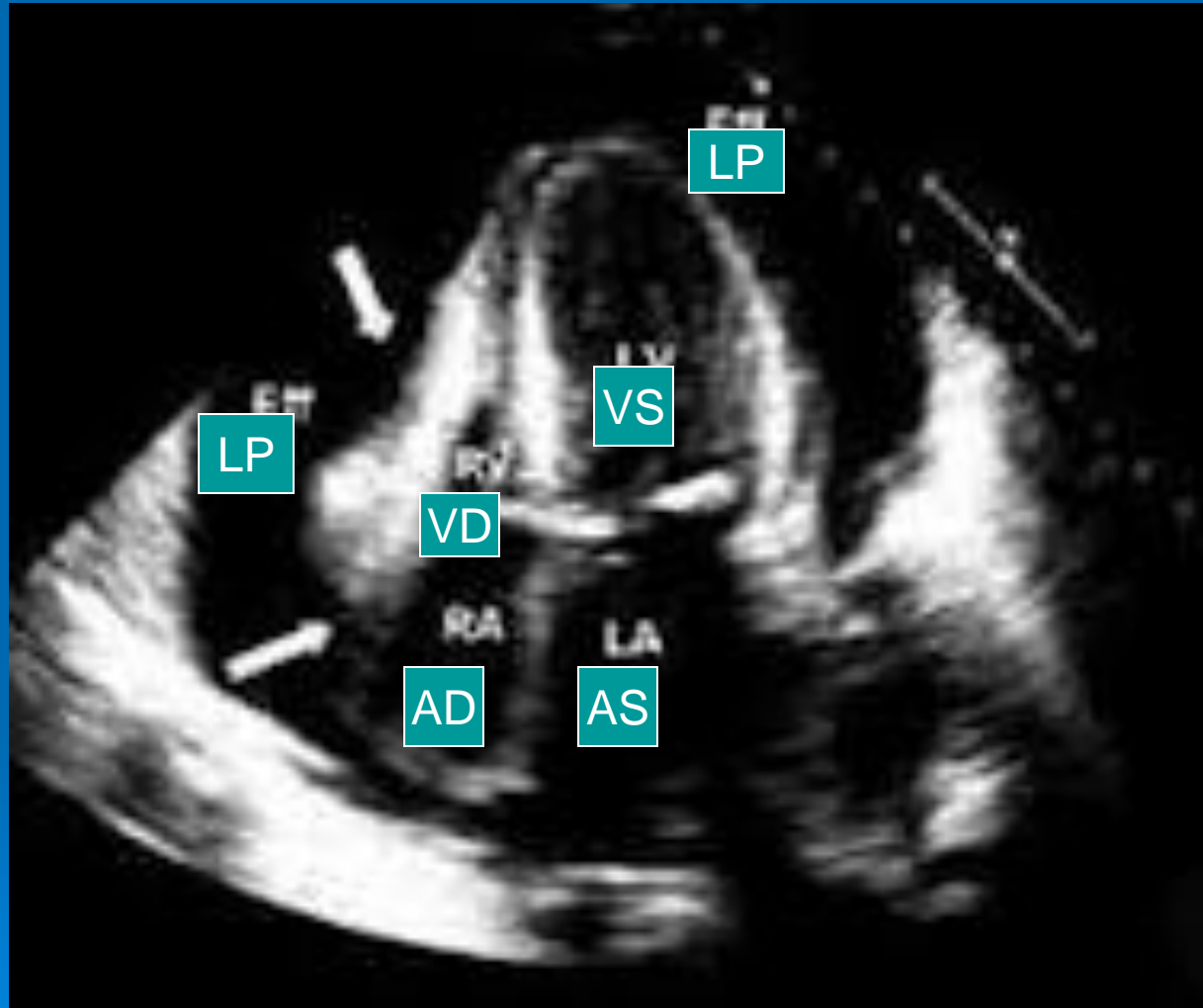
Anterior si posterior, LP vechi, cu fibrina



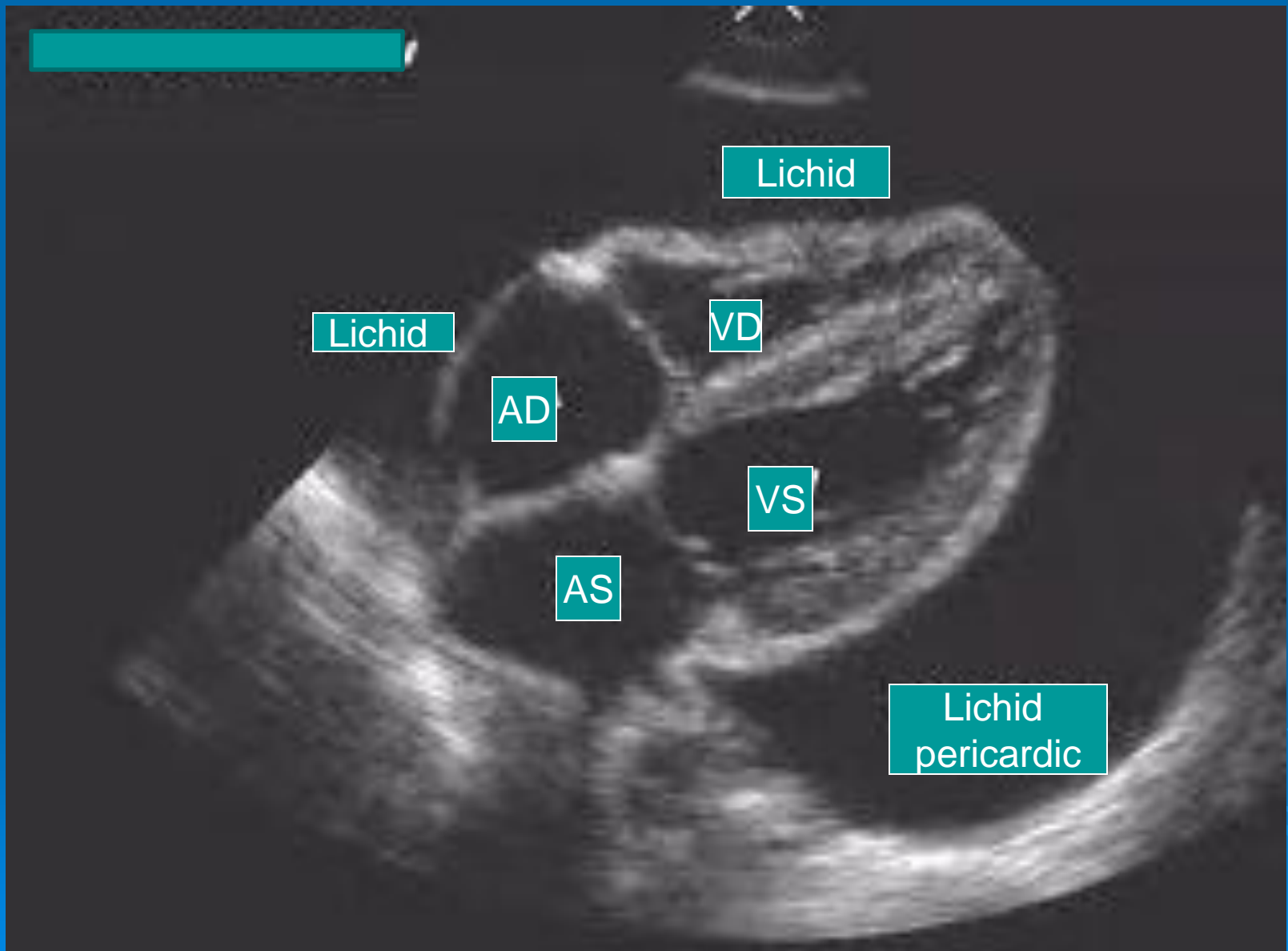
# Tamponada pericardica cu colabare de AD si VD



# Tamponada



Sageti: colabare de AD si VD



Tamponada pericardica



# Tratament

- Nu este tratament specific pt cea virală - AINS.
- Pt precordialgii: salicilati
- Tratament specific in TBC, uremie, HIV, etc.
- Corticoterapie post chirurgie cardiaca sau in RAA.
- Digitala e contraindicata in tamponada pentru ca blocheaza tahicardia, care e mecanism compensator.
- Pericardiocenteza si drenaj LP in tamponada.
- Examinare lichid:
  - frotiu direct pt celularitate
  - Cultura, BK, fungi
  - Glucoza si proteine
  - Daca e purulent: antibiotice 4-6 sapt IV

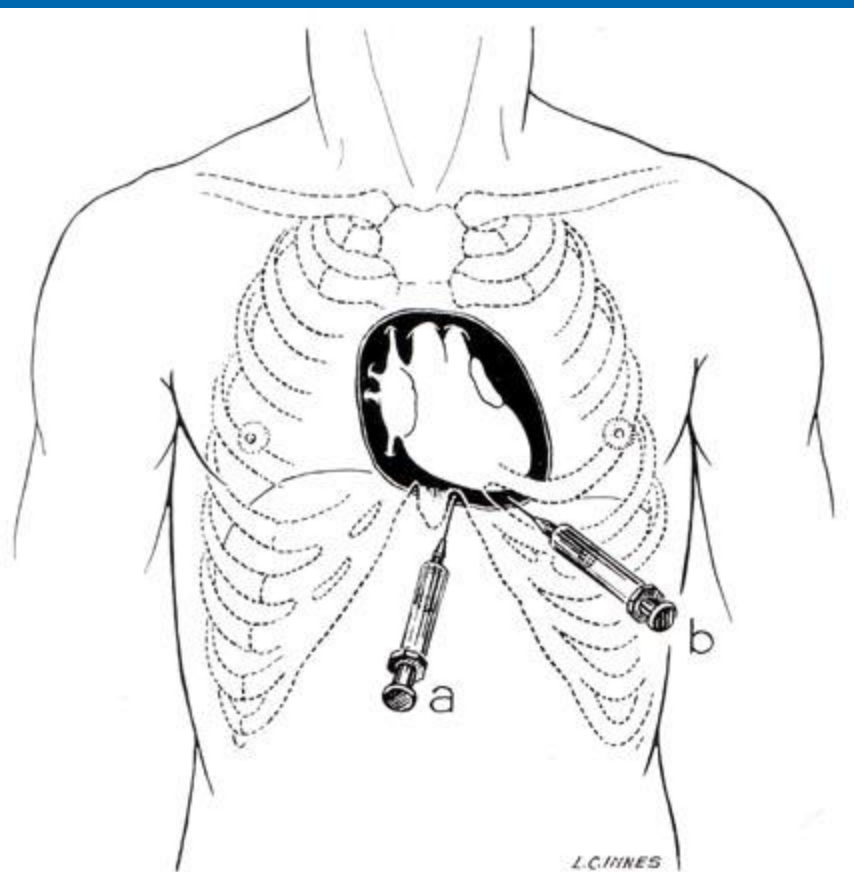
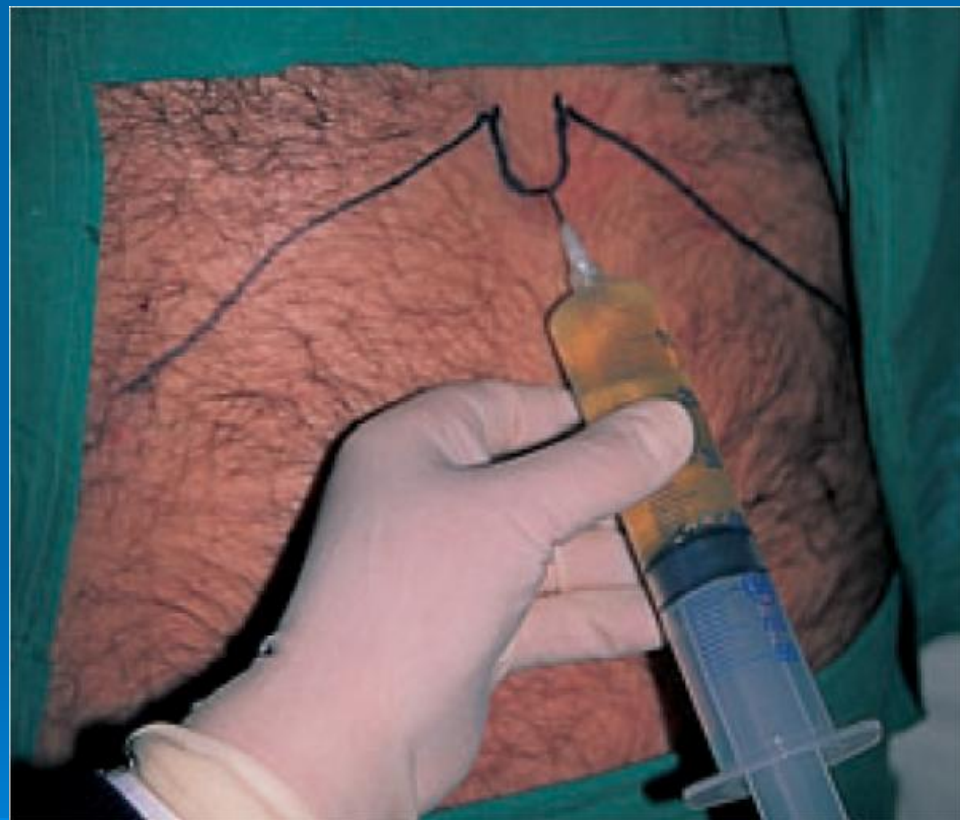


FIGURE 20.—Management of cardiac tamponade by aspiration: Substernal transdiaphragmatic aspiration (a), and left lateral aspiration (b).





# Recuperare

- Refacerea după pericardită presupune cel puțin 1 lună de repaus, în funcție de tipul, mărimea și durata acesteia.
- Se contraindica sportul în această perioadă.
- Efort fizic minim în prima lună, apoi gradual, în limita toleranței fizice a copilului.

# PERICARDITA CONSTRICTIVA



## Definitie:

Pericardita constrictiva reprezinta o **ingrosare a foitelor pericardului**, care devine **fibrotic si aderent**, restrictionand umplerea diastolica a cordului.

## Etiologie:

- Virala – rar
- TBC
- Purulenta, incomplet drenata si tratata
- Hemopericard
- Post radioterapie oncologica
- Infiltrare neoplazica
- Colagenoza

# Diagnostic

## ➤ Clinic:

- Distensie jugulara
- Hepatomegalie, ascita si edeme

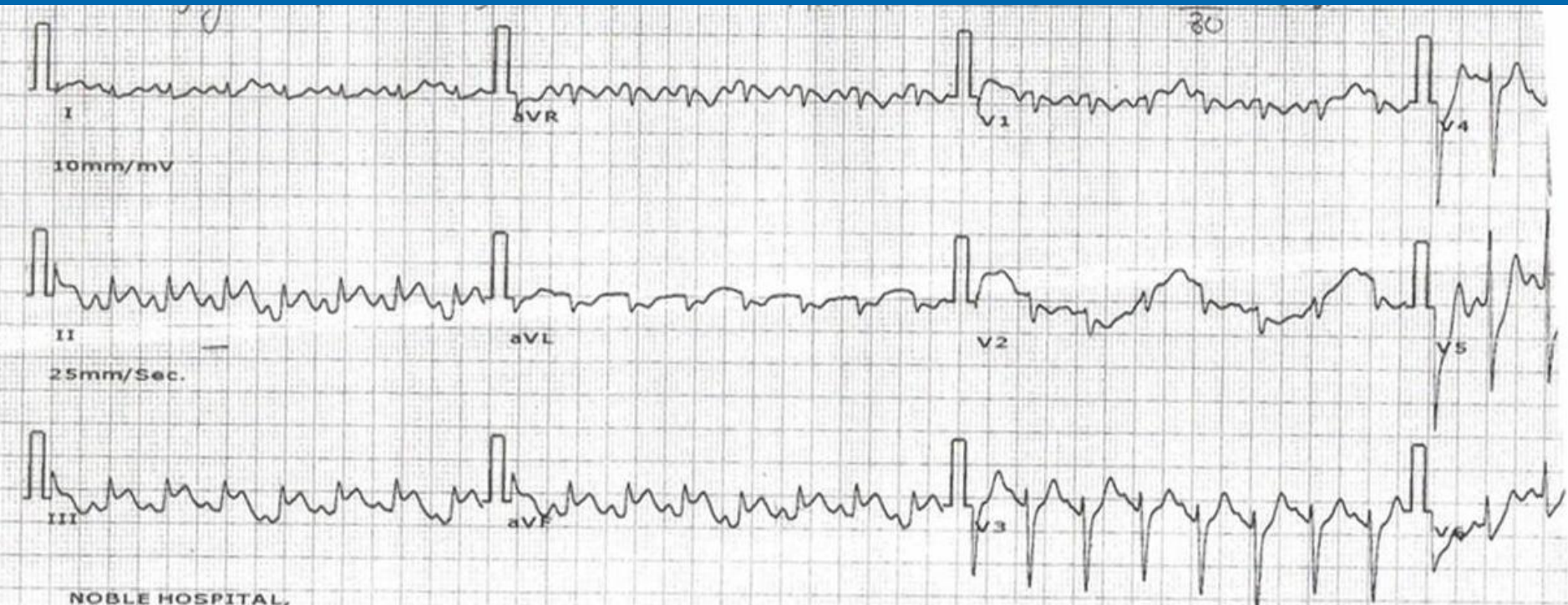
## ➤ Rx cp:

- Calcificari pericardice
- Dilatare VCS si AD
- Lichid pleural

# Diagnostic

## ➤ ECG

- Hipovoltaj QRS
- Inversare unda T
- HAD
- FiA



# Diagnostic

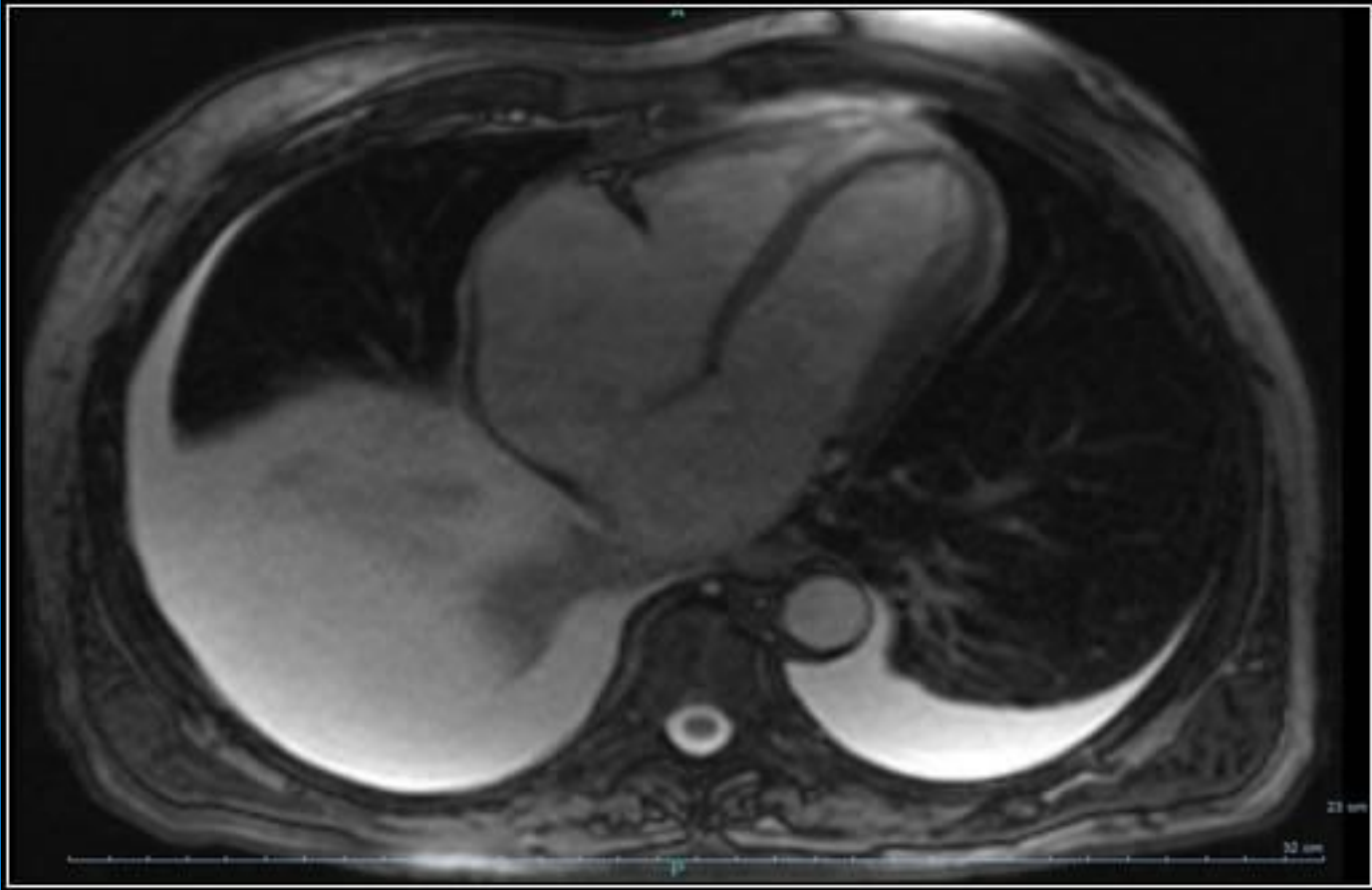
## ➤ Echocardiatic:

- Pericard hiperechogen
- Miscare paradoxala de sept
- Disfunctie diastolica si variatii respiratorii

## ➤ Cateterism cardiac:

- Presiunea in AD, AS, Ventr. diastolic si AP = elevate si de obicei egale

# Angio RMN torace



Evidentiaza ingrosarea foitelor pericardului



# Tratament

- Rezectia completa a pericardului.
- Imbunatateste simptomele in 75% din cazuri.



# Recuperare

- Daca se poate decola pericardul, evolutia este buna.
- Efortul fizic al pacientului va ramane in schimb in limita tolerantei fizice.



➤ Va multumesc!

