

National University – Sudan  
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# Physiotherapy cardio-respiratory Clinic Course

## L 18 : Infective Endocarditis

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- ❖ Definition
- ❖ Classification
- ❖ Etiology
- ❖ Organisms
- ❖ Clinical Presentation
- ❖ Diagnosis
- ❖ Treatment

# Infective Endocarditis

- It is an endovascular infection of cardiovascular structures, including:
- Cardiac valves
- Atrial endocardium
- Ventricular endocardium
- Intracardiac FB
- Large intrathoracic vessels

# Classification

- Acute
- Subacute

# Etiology

- Usually due to:  
Damaged endocardium  
Bacteraemia

# Organisms

- Strept viridans (the commonest)
- Enterococci
- Staph aureus
- Staph epidermidis
- Diphtheroids
- Rarely
  - Haemophilus, Actinobacillus, Cardiobacterium, Eikenella, Kingella (HACEK)
  - Coxiella burnetii, chlamydia
- Fungi: candida, Aspergillus, Histoplasma
- Other causes: malignancy, SLE

# Acute

- Main cause:
- Staph aureus
- Risk factors:
- Dermatitis, iv injections, renal failure, organ transplantation, DM, post op wounds.
- Presents with acute heart failure plus or minus emboli.

# Subacute

- Tends to be on abnormal valves
- Risk factors

Mitral valve disease , aortic valve disease,  
coarctation of the aorta,

PDA, VSD,

tricuspid valve in i/v drug users,

prosthetic valves

# Presentation

- **Septic signs:**
  - Fever, Rigors, Night sweats
  - Splenomegaly, Anaemia, weight loss, clubbing
- **Cardiac:**
  - New murmur or changing pre-existing murmur, vegetation may lead to severe regurgitation, or valve obstruction, prolongation of PR interval, complete AV block
- **Immune complex deposition:**
  - Vasculitis,
  - Microscopic haematuria
  - GN and acute renal failure
  - Roth spots, splinter haemorrhages, Osler's nodes, Janeway's lesions
- **Embolic phenomena:**
  - emboli may cause abscesses in relevant organs

# Diagnosis

- **Duke criteria:**

- Major criteria

Positive blood culture ( typical organism in 2 separate cultures, or persistently positive blood cultures)

Endocardial involvement

Positive echo( vegetation, abscess, dehiscence of prosthetic valve)

New valvular regurgitation

## Minor criteria:

Predisposition

Fever >38 C

Vascular/immunological signs

Positive blood culture that does not meet major criteria

Positive echocardiography that does not meet major criteria

2 major or 1 major and 3 minor or 5 minor

# Treatment

- Benzylopenicillin 1.2 gm iv/4hourly + gentamicin 1 mg/kg iv/8 hourly for 4 weeks
- If acute add flucloxacillin 2 gm iv/6 hourly
- If prosthetic valve or MRSA, substitute flucloxacillin with vancomycin and rifampicin.
- Enterococci: amoxicillin 1 gm iv/6hourly + gentamicin as above
- Coxiella: doxycycline 100 mg/bd indefinitely + co-trimoxazole or ciprofloxacin
- Fungi: flucytosine 50 mg/kg iv/6 hourly + fluconazole 50 mg/24hour PO

# Antibiotic prophylaxis

- Not routinely recommended.

End