Lung diseases in TB and HIV infection

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Pulmonary disease in HIV

HIV Infection

- Infectious
  - PJP
  - CMV
  - Bacterial sarcoma
  - MTB/MOTTs

- Non Infectious
  - LIP
  - Lymphoma
  - Kaposi’s
Infectious pneumonia

- **Viral - 40%** (RSV, adenovirus, rhinovirus, para-influenza, CMV)
- **Bacterial:** S.pneumonia, S.aureus, Klebsiella
  Pseudomonas
- **Atypical:** M.pneumonia, C.pneumonia.
- **Opportunistic infections:** HIV, malnutrition- PJP, Fungal, TB
Complications

- Pneumothorax
- Lung abscess
- Empyema
- Bronchiectasis
- ARDS
- Persistent and chronic lung disease.
Management of Pneumonia

Antibiotics

Community

Oral antibiotics

Amoxycillin 90mg/kg/day
OR
Erythromycin 40mg/kg/day

In- Hospital

Oxygen /IVI Antibiotic

Penicillin
add
Aminoglycoside( Cefuroxime)
 +/- Cloxacillin
Poor response to therapy?

- Suppressed immunity
- Complication
- Heart – Left heart failure
- Other infection-hospital acquired/FB
- Incorrect Organism
- TubercuLosis
Mycobacterium TB

• Important Co-pathogen with HIV ↑ mortality.
• Incidence 11-52%.
• High index of suspicion
• Diagnosis: - PPD > 4mm
  - CXR typical/atypical picture.
  - NGA/Induced sputum
  - TB culture
• Treatment : conventional anti-TB drugs
Table 1: Chemoprophylaxis regimen for TB.

<table>
<thead>
<tr>
<th>Age</th>
<th>Drug</th>
<th>Dosage Range</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 years</td>
<td>RF/INH 150/100</td>
<td>&gt; 5kg: ¼ tablet, 5-10 kg: ½ tablet, 11-20 kg: 1 tablet</td>
<td>3 months</td>
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<tr>
<td>2-5 years</td>
<td>INH</td>
<td>10-20kg: 100mg/day, 21-30kg: 200mg/day</td>
<td>6 months</td>
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Mycobacterium Avium Complex (MAC 1).

• Multiple nontuberculous mycobacterial species of *M. avium*, *M. intracellulare* and *M. paratuberculosis*.

• Source: food and water; avoidance not possible. increased risk for disseminated disease in up to 40% of patients.

• MAC in developed countries second commonest opportunistic infection

  Risk groups: > 6 years CD4 count < 50
  2-6 years CD4 count < 75
  1-2 years CD4 count < 500
  < 12 months CD4 count < 750
MAC 2

- **Diagnosis:** Sputum
  
  Blood culture
  
  Biopsy

- **Treatment:**
  - New macrolides
    - Rifabutin
    - Quinolone
    - Rifampacin / Aminoglycoside.

- **ANTIRETROVIRAL** treatment.

- **Prophylaxis:** New macrolides.
Pneumocystis Jerovici pneumonia (PJP) (1)

- Most common opportunistic infection 1/3 to half infected patients.
- Presentation:
  - Well nourished
  - Tachypnoea
  - Fever
  - HYPOXIA
  - Clear lung fields
  - Non-productive cough
PJP (2)

- CXR: bilateral peri-hilar infiltrates or interstitial infiltrate with confluent alveolar shadows.
- Investigations:
  - LDH elevated >500
  - Induced sputum/BAL: (ELISA/PCR/Methanine silver stains)
- Treatment: Cotrimoxazole (30mg/kg)
  - Steroids (1-2mg/kg PO)
- Prophylaxis: Cotrimoxazole/ Dapsone (1mg/kg)
Cytomegalovirus infection

• One of the Herpes viruses
• Co-infection with PJP common-↑ mortality.
• Presentation: similar to PJP infection difficult to differentiate.
• Diagnosis: - Serology IgM /PCR
  - Urine culture
  - Lung biopsy
• Treatment : NB retinitis rule out
  Ganciclovir/Forscanet ( not SA)
Lymphocytic interstitial pneumonitis (LIP 1)

- Most common age 1-5 years
- Pathology: infiltration of lymphocytes into lung parenchyma and other organs.
- ? Association with EBV infection.
- Presentation: - cough
  - progressive dyspnoea
  - clubbing
  - chest deformity
  - lymphadenopathy
  - parotid enlargement.
LIP 2

- CXR: reticulonodular pattern – miliary picture.
- Gold standard diagnosis: lung biopsy
- Treatment: Steroids
- Antiretroviral therapy.
END