TB & HIV co-infection
interactions, considerations, pitfalls

Dr Sindisiwe van Zyl
Background

• facing a double epidemic

• TB leads to HIV disease progression & vice versa

• 70% TB patients are HIV co-infected

• 10% annual risk of TB in HIV positive patients
Impact of HIV on TB programme

• increased number of TB suspects, & TB patients

• increased HIV prevalence in TB patients

• HIV-related morbidity & mortality in TB patients

• delay in TB diagnosis

• risk of development of HIV-related stigma to TB
Impact of TB on HIV Programme

- TB is the commonest cause of death in persons living with HIV
- TB accelerates HIV disease progression
How HIV alters epidemiology of TB

- HIV Leads to:
  - Endogenous reactivation of pre-existing infection with M. Tuberculosis
  - Rapid progression from infection with M. Tuberculosis to active disease in HIV positive patients
• HIV masks clinical presentation of TB:
  - shared HIV & TB symptoms
  - atypical presentation of TB
  - smear-negative TB
  - extra-pulmonary TB
HIV and TB Management

• Reduce burden of TB in HIV patients
  - Intensified Case Finding
  - Isoniazid Preventative Therapy
  - Infection Control

• Reduce burden of HIV in TB patients
  - Early Initiation of ART
  - Initiation of co-trimoxazole for all TB patients
  - Integration of HIV and TB services

ANOVA HEALTH INSTITUTE
TRUST / SUPPORT / INNOVATE
1. Integration of TB/HIV services

• two diseases, one patient & one community

• needs a comprehensive approach - patient centred

• provide all services “under one-roof”

• **AIM:** Improve clinical outcomes for co-infected patients
2. Intensified Case Finding

- Active TB symptom screening for ALL patients at ALL health visits
- Four TB symptoms screen

**WHY?**

- Identify TB suspects, Early TB diagnosis
- Early initiation of TB treatment
- Better treatment outcomes
- Halt transmission of infection
- Identifies those without symptoms, opportunity for IPT
Four Symptoms screen

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Cough of any duration</td>
<td></td>
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<tr>
<td>Loss of weight</td>
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<td>Drenching night sweats</td>
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<td>Fever &gt; 24 hours</td>
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• **Presence of any ONE symptom:** investigate for TB/other causes

• **Other forms of active case finding:**
  - TB patients contact tracing & screening
  - community-based screening campaigns
  - TB screening in other high risk groups, (e.g. miners, prisoners)
3. Initiation of Co-trimoxazole

- for ALL TB/HIV co-infected patients, IRRESPECTIVE of CD4 count
- decreases mortality by 25-46%
- reduces hospital admissions
- protects against PCP, bacterial pneumonia, toxoplasmosis
4. Initiation of ART in TB patients

• All TB patients to be offered HCT/PICT on admission to TB clinic

• early initiation of ART associated with decreased morbidity & mortality

• pre-ART patients - TB treatment first, then ART after 2 weeks “fast-track”
Eligibility Criteria for ART

• Previous Guidelines, (Adult HIV Management Guidelines 2010)
  - All TB/HIV patients with CD4< 350
  - WHO Stage IV TB
  - MDR, XDR TB

• Latest guidelines, (Memo, July 2012)
  - All TB/HIV Co-infected patients, Irrespective of CD4
Baseline work-up

• full medical history & clinical examination

• clinical staging

• baseline blood tests (CD4, FBC, ALT, Cr)

• adherence counselling (NOT to delay ART initiation)
ART Regimen

• 3TC, TDF, EFV

• creatinine clearance > 60

• preferred regimen - taken once daily

• If cr clearance <60, d4T OR AZT (Only if HB >10)
Patient develops TB while on ART

• CONTINUE ART

• adjust treatment accordingly

- patient on NVP - change NVP to EFV
- patient on Aluvia - double dose of Aluvia OR boost Kaletra with Ritonavir in paediatric patients
TB Drugs & other drugs

• Drug – drug interactions:
  - PZA, INH and NVP = risk of liver toxicity
    \textit{NVP best not given with TB medication}
  
  - Rifampicin and Aluvia
  
  - Rifampicin and hormonal contraceptives
TB Drugs & ARVs

• Shared side effects:
  - Skin Rash: NVP, EFV, INH, Bactrim
  - Hepatitis: NVP, EFV, PZA, INH
  - GIT symptoms: Rifampicin, PZA, many ARVs
5. Infection Control

• **Definition:**
  - interventions required to prevent transmission of microorganisms from infected to uninfected individual

• effective infection control plan focuses on the:
  - health care worker
  - patient
Why TB Infection Control?
Why TB Infection Control?

- TB - **highly infectious** disease
- **Airborne** - transmitted by coughing, sneezing,
- High prevalence of **latent TB** in health care workers
- High risk of **active TB disease** in HCW
- Infection control to **break transmission line**
TB infection control principles

• prevent release of infectious aerosols in the environment (administrative controls)

• eliminate infectious TB aerosols once generated (Environmental controls)

• prevent inhalation of infectious TB particles, and prevent progression to TB disease (personal Risk reduction)
Administrative control measures

• identifying clients at risk of producing infectious particles
  - screening of all patients for TB
  - education of all patients in cough etiquette
  - provision of masks or tissues for coughing patients
  - triaging of patients
• **fast queue** of coughing & very sick patients

• **early investigation** for TB for clients who cough

• provision of **safe environment** for sputum collection, good ventilation
Cough Etiquette

Cover your mouth and nose with a tissue when you cough or sneeze

or
cough or sneeze into your upper sleeve, not your hands.

Put your used tissue in the waste basket.
Environmental control measures

• **well ventilated** waiting areas & consulting rooms

• opening windows & using fans to maintain good air circulation

• correct use of UV lights
Personal Risk Reduction

• use of **N95 mask** to prevent inhalation of TB

• encourage staff & patients to go for HCT, and to be on IPT if HIV positive

• training on infection control strategies for all categories of staff, & community
How to Implement Infection Control

• training of all staff, preferably onsite

• infection control committee - members to represent all staff categories, plus a community representative

• baseline assessment of infection control in your facility
• identify gaps to implement corrective measures

• monthly committee follow-up meetings to monitor progress

• compare baseline assessment with post-intervention assessments
What did YOU do to PREVENT TB today?

You can help prevent TB by:

1. **Coughing responsibly**
   - This will help to stop the spread of TB and other germs to people
   - Cover your mouth and nose with a tissue when you cough
   - Cough into your elbow NOT into your hand
   - Wash hands after coughing

2. **Opening windows**
   - This will help to keep the air around you clean
   - Open the windows at home
   - Open the windows in the taxi
   - Create a draft – this will blow TB germs away

3. **Going to the clinic if you are coughing, sweating and losing weight**
   - This will help the clinic sisters to treat you for TB before you spread TB germs to people

4. **Taking pills to prevent TB**
   - This will help to protect you from getting sick with TB
   - If you are healthy, and living with HIV you can take pills (INH) to prevent TB disease

Know your HIV status

TB makes HIV wo
HIV makes TB wo
Thank you

WHEN A VIRUS (HIV) AND A BACTERIA (TB) CAN WORK SO WELL TOGETHER – WHY CAN'T WE?
MICHIEL SIDIBE