Multi-drug resistant TB in Africa

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TB remains a ‘Global Emergency’. Report highlights the scale and gravity of TB problem across the world.

Expresses serious concern over spread of MDR-TB across eastern Europe, Asia and Africa.

Accurate data on MDR-TB from West, East and Central Africa is unavailable.
Drug Resistant TB - definitions

- **MDR-TB (Multi-drug resistant TB):**
  
  TB caused by *M. tuberculosis* strains resistant to:
  
  (a) isoniazid (INH) and (b) rifampicin (RIF)

- **XDR-TB (Extensively drug-resistant TB):**
  
  TB caused by *M. tuberculosis* strains resistant to:
  
  (a) INH and RIF (i.e. = MDR-TB), plus
  
  (b) any fluoroquinolone, plus
  
  (c) at least one of the three injectable drugs:
  
  capreomycin, amikacin or kanamycin

- **Pan-drug-resistant TB:**
  
  TB caused by *M. tuberculosis* strains resistant to:
  
  all first and second-line TB drugs
Shocking - Global TB Data on a treatable disease

TB remains the top killer from an infectious disease worldwide, and has not received political or funder attention compared to HIV/AIDS.

In 2016 there were 10.4 million (1 million co-infected with HIV) people with active TB. 1.7 million people died of TB worldwide (despite effective treatment available since 1960).

WHO estimates 600,000 cases of rifampicin-resistant TB of which 490,000 had multidrug-resistant (MDR) - less than 50% survive after receiving currently recommended treatment regimens!!
GLOBAL TB estimated incidence rates
WHO Data: MDR-TB in 2010

MDR-TB among new TB cases
Early treatment outcomes and HIV status of patients with extensively drug-resistant tuberculosis in South Africa: a retrospective cohort study


Summary

Background Data from Kwazulu Natal, South Africa, suggest that almost all patients with extensively drug-resistant (XDR) tuberculosis are HIV-positive, with a fatal outcome. Since, there are few data for the treatment-related outcomes of XDR tuberculosis in settings with a high HIV prevalence, we investigated the associations of these diseases in such settings to formulate recommendations for control programmes.
MDR-TB estimates – lack of accurate data
Countries in the three high-burden country lists for TB, TB/HIV and MDR-TB being used by WHO during the period 2016–2020, and their areas of overlap

TB
- Cambodia
- Sierra Leone

MDR-TB
- DPR Korea
- Pakistan
- Philippines
- Russian Federation
- Viet Nam

TB/HIV
- Brazil
- Central African Republic
- Congo
- Lesotho
- Liberia
- Namibia
- UR Tanzania
- Zambia

Botswana
- Cameroon
- Chad
- Ghana
- Guinea-Bissau
- Malawi
- Swaziland
- Uganda

Indicates countries that are included in the list of 30 high TB burden countries on the basis of the severity of their TB burden (i.e. TB incidence per 100 000 population), as opposed to the top 20, which are included on the basis of their absolute number of incident cases per year.
Percentage of MDR-TB cases tested for susceptibility of second line TB drugs
USA Federal health authorities said Tuesday that they are looking for people who may have been exposed to a rare and potentially fatal form of tuberculosis (XDR-TB) from an infected passenger (Andrew Speaker, attorney from Atlanta) during two trans-Atlantic flights this month (CNN, 2007).
Dogma after the Kwazulu Natal outbreak of XDR-TB
Rise of MDR-TB and Healthcare workers

Tropical Medicine and International Health

Extensively drug-resistant tuberculosis (XDR-TB) among healthcare workers in South Africa

Julie Jarand1,2, Karen Shean2, Max O’Donnell3, Marian Loveday4, Charlotte Kvasnovsky5,6, Martie Van der Walt6, Shahieda Adams1, Paul Willcox2, Justin O’Grady7, Alimuddin Zumla7 and Keertan Dheda1,7

March 2015 Volume 32, Pages 147–151

Why healthcare workers are sick of TB

Trials and tribulations of an African-led research and capacity development programme: the case for EDCTP investments

A. Zumla\textsuperscript{1,2,3}, J. Huggett\textsuperscript{1,3}, K. Dheda\textsuperscript{2,3,4}, C. Green\textsuperscript{1,3}, N. Kapata\textsuperscript{1,3,5} and P. Mwaba\textsuperscript{1,6}

- Outputs of UNZA-UCLMS Project:
  - 132 publications
  - Zambians as lead authors: 74
  - Lancet articles: 16
Way forward for achieving TB control?

- Accountability, responsibility and good leadership
- Sustainable donor and government investment
- Eradicating poverty, providing better housing and nutrition
- Large ‘ONE HEALTH’ consortia for R&D priorities
- Holding hands and moving forward together
- Removing egos – obtaining ‘unity of purpose’
Pan-African Network for Rapid Research, Response, Relief and Preparedness for Infectious Diseases Epidemics

PI and Coordinator: Professor Francine Ntoumi PhD.FRCP
Fondation Congolaise pour la recherche medicale, Brazaville
Lateral thinking required
– anything unusual here? TB or not TB?
Novel treatments for MDR-/XDR-TB

‘Les terrain est tout
Le microbe nest trien’ - Louis Pasteure

HOST-DIRECTED THERAPIES
-stimulate lung immune responses
-eradicate mycobacteria
-regenerate lung tissue
Zikomo Kwambhiri
Grazias
Děkuji
Kiitos
Terima kasih
Shukran gazilan
Jazakallah kheir
Thank you
Asante
Merci beaucoup
Dankie