Treatment outcomes in HIV infected and uninfected drug resistant tuberculosis patients in Khayelitsha, Cape Town

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Presented by Dr. Vivian Cox
Background

- Population ~ 500,000
- 50% live in informal dwellings
- Antenatal prevalence 34% (2012)
- Mother-to-child transmission 1.7% (2012)
- ~ 6,000 TB cases registered each year (75% HIV infected)
- ~ 200 drug-resistant TB (DR-TB) cases diagnosed each year
- ~ 46% success rate, 20% mortality rate for DR-TB
- 11 health facilities providing TB and HIV care; 28 738 patients on ART (March 2014)
MSF project overview

• Started in 1999 with PMTCT
• Feasibility of ART provision in public sector
• ART service handover completed 2010
• Decentralization of DR-TB treatment from late 2007
• Direct patient care was handed over 2010-2011
• DR-TB service handover completed in 2013
• TODAY: Innovative pilot strategies to support increased uptake, improved outcomes and long term retention in HIV/TB care
Research question and methodology

- ART known to improve outcomes in drug-sensitive TB
- Limited data on outcomes of DR-TB patients on ART
- High ART coverage among DR-TB patients in Khayelitsha

Methodology

- Retrospective analysis of routine DR-TB data
- Patients started on DR-TB treatment from 2008 - 2011
- Analysis of treatment outcomes and mortality* from 2008 - 2013

*from clinic records, counselors and staff, and linkage to death registry
Results: *Patients diagnosed with DR-TB*

<table>
<thead>
<tr>
<th>DR-TB Classification</th>
<th>HIV+ n= 607 (%)</th>
<th>HIV- n=232 (%)</th>
<th>HIV status unknown n=36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presumed MDR-TB</td>
<td>9 (1)</td>
<td>26 (11)</td>
<td></td>
</tr>
<tr>
<td>Rifampicin mono-resistance</td>
<td>129 (21)</td>
<td>28 (12)</td>
<td></td>
</tr>
<tr>
<td>MDR-TB</td>
<td>373 (61)</td>
<td>144 (62)</td>
<td></td>
</tr>
<tr>
<td>MDR TB plus 2(^{nd}) line resistance</td>
<td>96 (16)</td>
<td>34 (15)</td>
<td></td>
</tr>
</tbody>
</table>

Total = 839
Results: Patients starting treatment

- 116 (100 HIV+) did not start treatment
- 62 died before treatment start
- 55 HIV+ (89%) 7 HIV- (11%) (p<0.001)
## Results: *DR-TB treatment outcomes*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>HIV+</th>
<th>HIV-</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n= 440</td>
<td>n= 189</td>
<td></td>
</tr>
<tr>
<td>Treatment success</td>
<td>213 (48%)</td>
<td>88 (47%)</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Lost from treatment (default)</td>
<td>120 (27%)</td>
<td><strong>70 (37%)</strong></td>
<td>0.01</td>
</tr>
<tr>
<td>Treatment failure</td>
<td>26 (6%)</td>
<td>14 (7%)</td>
<td>&gt; 0.05</td>
</tr>
<tr>
<td>Died</td>
<td><strong>81 (18%)</strong></td>
<td>17 (9%)</td>
<td>0.004</td>
</tr>
</tbody>
</table>

# Cure and treatment completion
# Results: Mortality post treatment

<table>
<thead>
<tr>
<th>Mortality post treatment</th>
<th>HIV positive</th>
<th>HIV negative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time to death, months (IQR)</td>
<td>Time to death, months (IQR)</td>
</tr>
<tr>
<td>Died after LFT (default)</td>
<td>31/120 (26%) 6.7 (2.5-16.1)</td>
<td>15/70 (21%) 5.5 (3.5-13.3)</td>
</tr>
<tr>
<td>Died after treatment failure</td>
<td>20/26 (77%) 0 (0-0.2)</td>
<td>7/14 (50%) 5.7 (1.5-17.5)</td>
</tr>
</tbody>
</table>
## Results: Overall mortality

<table>
<thead>
<tr>
<th>HIV positive</th>
<th>HIV negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>n*</td>
<td>IR/100pys (95% CI)</td>
</tr>
<tr>
<td>132</td>
<td>19 (16-22)</td>
</tr>
</tbody>
</table>

*Includes mortality during treatment, post lost from treatment, and post treatment failure*
Discussion

• Greater mortality in HIV+ (on ART) prior and during DR-TB treatment

• Greater LFT (default) among HIV- with 21% mortality thereafter

• LFT masks mortality in both HIV+ and HIV- patients

• In the presence of ART, treatment success and long-term mortality is similar in HIV+ and HIV- DR-TB patients
Conclusions

• Diagnose and treat earlier: increase active screening of HIV+ patients for DR-TB
• More tolerable and effective DR-TB drug regimens and innovative patient support strategies to keep patients in care
• Make it easier for patients to stay on treatment in continuation phase by providing longer supply
• Increase efforts to bring patients back into care at initial treatment interruption
Acknowledgements

• MSF team
• City of Cape Town Health Department
• Western Cape Province Health Department
• Khayelitsha clinic staff
• People suffering from drug-resistant TB in Khayelitsha