Tuberculosis in 2017: Searching for new solutions in the face of new challenges

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Ambulatory Care Day 1 for Multidrug Resistant Tuberculosis

Jay Achar

MSF

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МІНІСТЭРСТВА АХОВЫ ЗДАРОЎЯ РЭСПУБЛІКА БЕЛАРУСЬ

Ambulatory Care Day 1 for Multidrug Resistant Tuberculosis

Programme experience from Uzbekistan

Overview

- Reasons for ambulatory care from day 1 (ACD1)

- Uzbekistan experience with ACD1
  - Background
  - Overall outcomes
  - Comparison of hospitalisation vs ACD1

Prevention of nosocomial transmission of extensively drug-resistant tuberculosis in rural South African district hospitals: an epidemiological modelling study

Sanjay Basu, Jason R Andrews, Eric M Poolman, Neel R Gandhi, N Sarita Shah, Anthony Moll, Prashini Moodley, Alison P Galvani, Gerald H Friedland

- Examined different strategies for reducing transmission
- Infection control measures
  - Limited effect alone
  - Combination increased effect
- Nearly 1/3 XDR cases prevented by:
  - Mask use
  - Reduced hospitalisation time
- Involuntary detention predicted to increase transmission

Lancet 2007: 370:1500-07

Systematic Review of Hospitalised & Ambulatory Treatment of MDR TB

- The pooled treatment success rate was 66.4%
- No statistical difference between ambulatory and hospital treatment
  - Ambulatory success = 65.5% (95% CI: 55.1–74.6%)
  - hospital-based success = 66.7% (95% CI: 61.0–72.0%)

Am J Trop Med Hyg. 2013 Aug 7; 89 (2): 271-280

Review of Costs of MDR TB Treatment

- Limited studies
- The outpatient-based model of care could reduce the cost (per DALY averted) by over 50%
- Study in Uzbekistan currently being conducted

Pharmacoeconomics 2012: 30 (1):63-80

Reasons for Ambulatory Care Day 1 (ACD1)

- Reduced risk of transmission
- Likely lower cost
- Patient centred: patient choice about where to receive follow up

Uzbekistan experience of ACD1 for MDR TB Treatment

Background

- In 2010 MSF/MoH introduced new guidelines including ACD1 for MDR-TB

- Hospitalisation for
  - severe illness
  - XDR-TB
  - Unable to cope at home

- Between 2010 and 2015 MoH and MSF scaled up Comprehensive MDR TB care including ACD1 to all districts

Study Aim and Criteria

- Compare outcomes for MDR TB patients starting tx on ACD1 or in hospital

- Inclusion Criteria:
  - Confirmed MDR TB
  - Commenced on MDR TB regimen
  - Enrolled between 1/1/2010 and 31/12/2014

- Exclusion criteria
  - XDR TB (as this was hospitalisation criteria)
  - Missing baseline lab results (first line and second line DST)
  - Extrapulmonary TB (more likely to be hospitalised)
  - Started on Shorter MDR TB Regimen

Baseline

Baseline Characteristic	Hospitalised	ACD1	P value
Age	31.6	30.0	0.01
Female Gender	385 (50.8%)	266 (49.5%)	0.66
Days Hospitalised	84	0	
BMI <18.5	387 (51.1%)	216 (40.2%)	<0.001
Not Employed	671 (88.5%)	469 (87.3%)	0.52
Heavy Alcohol Use	70 (9.2%)	40 (7.4%)	0.26
Diabetes	42	34	0.71
HIV	1	2	0.44
Cavities	585 (79.3%)	279 (52.1%)	<0.001

Month 2 Culture Conversion

Start Treatment Site	M2 Culture Conversion	Total
Hospitalised	292 (38.5%)	758
ACD1	275 (51.2%)	537

ACD1 treatment outcomes

Site	Success	Died	Failed	LTFU	Total
Hospital	482 (63.6%)	63 (8.3%)	36 (4.8%)	177 (23.3%)	758
ACD1	347 (64.6%)	26 (4.8%)	19 (3.5%)	145 (27%)	537
Total	829 (64.0%)	89 (6.9%)	55 (4.2%)	322 (24.9%)	1295

Adjusted OR for treatment success

Variable	Description	Adjusted OR (95% CI)	p-value
Treatment Site	**Hospital**	**1**	
	ACD1	**1.00 (0.78 – 1.28)**	**0.989**
Age	Per increasing year	0.98 (0.97 – 0.99)	<0.001
Female Gender		1.42 (1.12 – 1.79)	0.004
Baseline DST	Km resistance	0.76 (0.59 -0.98)	0.036
Employment status	Employed	1.95 (1.30 – 2.92)	0.001
Xray	Presence of cavitites	0.88 (0.68 – 1.15)	0.345

Summary findings

- No association between site of treatment initiation site and treatment success
- Female and employment status associated treatment success
- Increasing age and Km resistance associated with poor treatment outcome

Limitations

- Retrospective study
- Criteria for hospitalisation introduces bias
  - Impact lessened by gradual implementation
- Missing data
  - Missing lab data in particular led to exclusion
- Further work required to update to 2013 WHO definitions

Conclusions

- Patients started on ambulatory care for MDR TB treatment
  - In this study had less severe disease (BMI and x-ray cavities)
  - Were more likely to culture convert at 2 months
  - Similar rates of treatment success after accounting for measured factors

Conclusions

- Ambulatory Care from Day 1 can be an acceptable model of care for MDR TB treatment in contexts with high second line drug resistance

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