Characteristics and Outcomes Among Patients with MDR-TB in a Decentralized, Community-based Treatment Program in Rural KZN, South Africa

Karen Jacobson, MPH1,2, Francois Eksteen, MD,1-3, Anthony Moll, MBChB2,3, Gerald Friedland, MD, FIDSA4, Alois Mngadi, MD,5, Lee-Megan Larkan6, Phumelele Mhlongo2 and Sheela Shenoi, MD, MPH6

(1)Icahn School of Medicine at Mount Sinai, New York, NY, (2)Philani, Tugela Ferry, KwaZuluNatal, South Africa, (3)Church of Scotland Hospital, Tugela Ferry, KwaZuluNatal, South Africa, (4) Yale University School of Medicine, New Haven, CT, (5) Greytown MJ Hospital, Greytown, KwaZuluNatal, South Africa

**Background**

- South Africa has one of the highest global incidence rates of MDR-TB; 14,161 cases were diagnosed in 2012 (1.8% of new TB cases, 6.7% of previously treated TB cases).
- Drug resistant TB (DR-TB) presents a serious threat to TB control efforts; in 2012, 4.7% of TB cases in South Africa were laboratory-confirmed as multi-drug resistant (MDR) TB (resistant to isoniazid and rifampicin), or extensively drug resistant (XDR) TB (MDR-TB with additional resistance to a fluoroquinolone and either kanamycin, amikacin, or capreomycin).
- More than 70% of South African TB patients are co-infected with HIV.

- In 2006, an epidemic of MDR-TB, with extremely high mortality rates, was uncovered in the uMzinyathi district of rural KwaZuluNatal, South Africa.
- To address treatment delays and high rates of mortality and default at the single centralized provincial treatment facility, a decentralized treatment program for MDR-TB cases was established in 2008 in uMzinyathi District.
- Program components include an inpatient facility, outpatient clinic and community-based treatment provided by mobile teams.
- We evaluated MDR-TB treatment outcomes and trends over time since the commencement of this decentralized program.

**Methods**

- We reviewed the standardized Department of Health MDR-TB treatment register at the decentralized treatment program to abstract data on demographics, diagnostics, and treatment outcomes among patients initiating MDR-TB treatment between January 1, 2008 and December 31, 2013.

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**Results**

- **760 Patients Registered from January 1, 2008 to December 31, 2013**
- **10 Died prior to MDR-TB Treatment Initiation**
- **703 Began MDR-TB treatment**
- **47 Remained on Surveillance**
- **294 (51.3%) Successfully Completed Treatment**
- **131 (22.9%) Died on Treatment**
- **33 (5.8%) Defaulted Treatment**
- **82 (14.3%) Transferred to Provincial XDR-TB Facility**
- **114 Still on Treatment**
- **16 Transferred out of District**

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- **MDR-TB Treatment Outcomes by Year**
- **Number of Deaths per 100 persons on treatment**
- **Death Rates By Year of Registration**

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**Discussion and Conclusions**

- **Low overall default rate (5.8%) compared to national (17%) and regional (9.2%) rates supports effectiveness of MDR-TB program decentralization.**
- **Outcomes in HIV+ patients support HIV/TB integration.**
- **The substantial proportion of MDR-TB as Initial TB diagnosis indicates primary transmission of MDR-TB and highlights need for improved infection control in health care and community settings.**
- **Increasing death rates and decreasing median time to death is likely due to increased and earlier case finding. Patients with advanced disease who would have died in the community prior to diagnosis are now entering care sooner; however these patients are more likely to die soon after treatment initiation; highlighting the need for improvement of logistics of inpatient facilities to handle critically ill MDR-TB patients.**
- **Though low overall compared to nationwide rates, fluctuations in mortality need further evaluation and may reflect changes in patient and TB program characteristics over time, including disease severity, improved case finding, earlier diagnosis, and increasing MDR-TB program maturity.**
- **This review supports benefits of decentralization and community-based MDR-TB treatment programs in high prevalence areas.**

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