1883. Factors Associated with Stigma Toward Isoniazid-Preventative Therapy in a Rural Community of South Africa

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**Background.** Patients living with HIV should receive isoniazid-preventative therapy (IPT) in order to prevent tuberculosis (TB). In South Africa, IPT implementation has decelerated. Stigma is frequently found to be a barrier to treatment. We sought to understand community members’ perceptions of TB and HIV stigma in order to inform future IPT implementation efforts.

**Objectives.** We aimed to understand community members’ perceptions of TB and HIV stigma in order to inform future IPT implementation efforts.

**Methods.** We conducted a cross-sectional, quantitative study of 230 adults living in a rural community in South Africa. Participants were recruited using a convenience sample. A standardized questionnaire was used to collect data on demographic characteristics, TB and HIV knowledge, and stigma perceptions. Data were analyzed using descriptive statistics.

**Results.** The majority of participants were female (58.3%) and the median age was 35 years (IQR: 25-45). Most participants (91.3%) had heard of TB, and 87.4% knew it could be prevented. HIV knowledge was lower, with 63.0% identifying it as a preventable disease. Stigma was prevalent, with 74.3% of participants reporting that people with TB were discriminated against. The most common reasons for discrimination were fear of contagion (34.3%) and misunderstanding of the disease (25.7%).

**Conclusions.** Stigma remains a significant barrier to IPT implementation in rural South Africa. Strategies to reduce stigma are needed to improve uptake of IPT.

**Disclosures.** All Authors: No reported Disclosures.
Methods. The study was conducted in the rural KwaZulu Natal province of South Africa. Community members were interviewed anonymously and answers to interview questions were scored to represent stigma. Three different domains of TB knowledge were evaluated: causes, transmission, and treatment and prevention of TB. All three knowledge scores were added to create a total knowledge of TB score. A 7-item scale was used to assess stigma; presence of stigma was defined as 1 or more positive responses on the scale. Descriptive statistics, chi-square tests, linear regression, and Kruskal–Wallis tests were performed.

Results. Among 104 participants, the mean age was 35 ± 9.3 years, 65% were female, and 28% completed secondary school. Overall, respondents had poor knowledge about the causes (mean = 61, SD = 27) and transmission (mean = 46, SD = 21), and good knowledge of the treatment and prevention (mean = 88, SD = 18) of TB. The vast majority of participants identified the presence of stigma (72%), with a mean score of 1.7, SD = 1.4. Participants were less likely to report stigma with excellent TB knowledge, characterized by accurate responses to at least 95% of the knowledge items (P = 0.025). Factors associated with higher levels of stigma included marital status (P = 0.01), being previously screened for TB (P = 0.008), considering mosquitos as a vector for TB transmission (P = 0.005), worrying about being infected with TB (P = 0.017), and reporting traveling to the clinic to be expensive (P = 0.03). Interest in taking IPT exhibited a trend toward significance with lower levels of stigma (P = 0.057). On multivariable linear regression of stigma, marital status (P = 0.004) and place of TB screening (P = 0.0149) were significant.

Conclusion. HIV-related stigma was prevalent among rural South African community members considering IPT. Stigma decreased with higher knowledge levels. Global expansion and implementation of IPT will require interventions to reduce stigma.

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1884. Clinical Outcomes Among Patients with Drug-Resistant Tuberculosis Receiving Bedaquiline or Delamanid Containing Regimens
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Background. Bedaquiline and delamanid are now and much-needed treatment options for drug-resistant tuberculosis (TB); however, there are limited data guiding their use and no direct comparison of the two drugs. We thus sought to compare the clinical outcomes of patients with drug-resistant tuberculosis receiving either a bedaquiline- or delamanid-based treatment regimen.

Methods. This is a prospective observational study among patients with drug-resistant pulmonary TB in the country of Georgia from 2015 to 2017. Patients receiving bedaquiline or delamanid were eligible to be enrolled. Monthly sputum cultures and MIC testing on isolates were performed. Clinical outcomes included time to culture conversion, rate of acquired drug resistance and treatment outcomes.

Results. Among 156 patients with MDR-TB who were approached, 100 were enrolled, and 95 were receiving a bedaquiline (n = 64) or delamanid (n = 31) based regimen and included in the study. Patients receiving bedaquiline or delamanid were similar with regards to age, BMI, substance use, comorbidities, rate of cavitary disease, and extensively drug-resistant (XDR) TB. Rates of additional Class A drug use including lincosef (78 vs. 81%) and a fluoroquinolone (39 vs. 36%) were similar and the mean effective drugs received per group was 4 (IQR 3–4, P = 0.33). Median drug duration was 171 days for bedaquiline and 182 days for delamanid; no patient discontinued due to QTc prolongation. Adjusted cumulative culture conversion rates at 60 days were 84% vs. 48%, 8% vs. 14%, and 180 days 95% vs. 77%, P = 0.02. Patients receiving bedaquiline compared with delamanid (see figure). Rates of acquired drug resistance were higher in patients receiving delamanid compared with bedaquiline (35 vs. 12%, P < 0.01). Lastly, patients receiving a bedaquiline-based regimen had higher rates of favorable outcomes as compared with patients receiving delamanid (94% vs. 67%, P = 0.01).

Conclusion. Patients receiving bedaquiline- and delamanid-based treatment regimens for drug-resistant TB had similar characteristics and those receiving bedaquiline had better clinical outcomes. Our results provide an important first comparison of bedaquiline vs. delamanid containing regimens.

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1885. T-helper 1 (Th1) Production of Interferon Gamma (IFNγ) Is Directly Inhibited by TGFβ Within Pulmonary Mycobacterium tuberculosis (Mtb) Granulomas
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Background. CD4 T-cell production of IFNγ is essential to prevent dissemination of pulmonary Mtb, though is less effective at controlling infection within the lung. Because T cells are most effective in the context of direct interactions with Mtb-infected cells, we sought to determine the location of CD4 T-cell antigen sensing and IFNγ production within granulomas.

Methods. We used a murine ultra-low-dose aerosol infection, developed by our lab, where most mice are infected by a single bacillus, resulting in a solitary granuloma that is more similar to human granulomas. We examined the lungs of wild-type mice 35 days later for patterns of T-cell activation with quantitative confocal imaging. This analysis was next performed following adoptive co-transfer of Th1 polarized Mtb-specific cells and control cells of irrelevant specificity (OVA). To determine the effect of TGFβ on IFNγ production, we examined mice that lack the TGFβR on T cells (TGFβR−KO).

Results. Finally, we examined whether this was Th1 cell-intrinsic with an adoptive transfer of Th1 polarized Mtb-specific cells with (Tg WT) and without (Tg KO) the TGFβR.

Conclusion. CD4 T cell production of IFNγ is decreased within the granuloma, where it can be most effective, despite evidence of ongoing TCR stimulation in Mtb-specific cells. We have shown that alleviating the effects of TGFβ signaling, even terminally-differentiated Mtb-specific Th1 cells can produce more IFNγ within the granuloma. While this modest increase suggests that there are additional mechanisms at play which warrant further exploration, these findings have the potential to guide immunotherapeutic development, especially given that TGFβ inhibitors are already in phase III clinical trials for other purposes.