Conclusion. Majority of our patients in the study have positive TB culture after two weeks of rifampicin based anti-tuberculosis therapy. So, discontinuation of the isolation after 2 weeks of treatment assuming that bacilli in the smear are nonviable may not be safe.

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795. Review of Treatment of Latent Tuberculosis Infection at VA Portland Healthcare System

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Background. Treatment of latent tuberculosis infection (LTBI) is important for tuberculosis elimination in low-incidence countries. Currently, the VA Portland Health Care System (VAPORHCS) offers both 3HP (12-dose rifapentine plus isoniazid directly observed therapy (DOT)) and 9H (9-month daily isoniazid) for treatment of LTBI. Majority of veterans are treated with 9H despite increasing evidence showing higher rates of completion with 3HP. We reviewed the rates of completion and adverse events (AE) between veterans treated with 3HP and 9H.

Methods. We performed a retrospective chart review on all patients within the VAPORHCS who initiated LTBI treatment with 9H or 3HP between January 2011 and December 2016. LTBI was diagnosed through tuberculin skin testing or interferon-γ release assay. 9H treatment was self administered while 3HP was under DOT. Collected data included demographics, co-morbid conditions, immunosuppression, treatment completion, and AE. Treatment completion was determined through chart documentation.

Results. A total of 93 patients were treated for LTBI. Most patients were white (71%) and male (86%). The median age was 57 years old. Seventy-two patients (77%) were treated with 9H, and 21 (23%) were treated with 3HP. The overall completion rate was 86%. Completion rates between 9H (91%) and 3HP (86%) were not significantly different ($P = 0.46$). Twenty-three patients (31.9%) on 9H and six patients (28.6%) on 3HP were on chronic immunosuppression with TNF inhibitors and/or corticosteroids ($P = 0.78$) with an overall completion rate of 86%. Nine patients (13%) on 9H and two patients (10%) on 3HP had HIV ($P = 0.95$). Overall rates of AEs were similar between the groups (4%, 14%, $P = 0.11$), including hepatotoxicity (2%, 0%, $P = 0.57$) and neurotoxicity (4%, 5%, $P = 0.94$).

Conclusion. The overall treatment completion rates were high and statistically similar between 9H and 3HP groups, even with immunosuppressive therapy. There were no significant differences in rates of adverse events. While the majority of patients were treated with 9H, these results suggest an opportunity for more use of the 3HP, possibly without the need for DOT regimen going forward.

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796. Treatment of Latent Tuberculosis Infection in a Refugee Population

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Background. As tuberculosis (TB) rates decline in the United States, many new cases are among individuals who migrated from countries with a high incidence of TB. Public Health – Dayton & Montgomery County screens incoming refugees for active and latent TB. The objective of this study was to estimate the number of active cases of TB prevented through screening and treatment of LTBI.

Methods. Data were collected through retrospective chart review of refugee seen between July 1, 2011 and June 30, 2015. Refugees younger than 5 years old were excluded. New cases of active TB identified from July 1, 2011 through August 31, 2017 were reviewed for cases in refugees. The number of expected new, active TB cases was 100–150 per 100,000 person-years of follow-up (McBride, MJA 2012).

Results. A total of 607 charts were reviewed: 373 were males, 234 females. Ages ranged from 6 to 77 years, average 27.4 years. The leading countries of origin were Kenya (79), Iraq (68), Rwanda (59), Ethiopia (55), and Nepal (52). There were three cases of active TB diagnosed on initial evaluation; there were no cases of active TB diagnosed in 2,341 person-years of follow-up. Among refugees, 23.1% had positive T-Spots; highest in the 36–45 age group (35.0%) and refugees from South to East Asia (29.6%). LTBI was diagnosed in 21.1% of refugees; highest in the 46–55 age group (33.3%) and refugees from South to East Asia (27.8%). The majority of subjects with LTBI completed treatment (78.9%). Treatment completion was highest among the 13–17 age group (100.0%), males (81.4%), and refugees from South to East Asia (92.9%); lowest in the >56 age group (40.0%) and European region (50.0%).

Conclusion. Based on published data, an estimated 2.3–3.5 active cases of TB were prevented through this program. Treatment completion rates were higher than reported for non-refugee populations. Results indicate the program is effective at screening for and preventing development of active TB.

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797. Tuberculosis Treatment: Combined Forms vs. Dissociated Forms

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Background. Tuberculosis treatment is based on the regular and concomitant intake of several antibiotics. The goal of this multidrug therapy is to prevent the selection of mutants resistant. This combination drug comes in two regimens with dissociated forms (DF) and combined forms (CF). Our study aimed to compare both forms of anti-tubercular treatment.

Methods. We retrospectively collected data from the regional registry of tuberculosis in the government of Sfax as a part of the National Tuberculosis Program. We included all new cases of tuberculosis from January 1995 to December 2016.

Results. We counted 2,771 cases of tuberculosis. There were 59.5% cases with extra-pulmonary (n = 1,650) forms and 40.5% with pulmonary forms (n = 1,121). The median age was 38 years (IQR = [25–55 years]) with a male predominance (n = 1,508; 54.4%). We noted that 72.9% of patients (n = 1,985) received the DF, 26.2% (n = 714) received the CF and 0.8% (n = 23) received both forms of treatment. DF was significantly more prescribed in patients with extra-pulmonary tuberculosis (75.4% vs. 72%; OR = 0.837; $P = 0.043$) whereas CF was significantly prescribed in patients with pulmonary tuberculosis (28% vs. 24.6%; OR = 0.837; $P = 0.043$). DF was more used in patients with primary tuberculosis infection (30.3% vs. 21.6%; OR = 0.632; $P < 0.001$). The duration of treatment was significantly higher in patients who received DF (9 months vs. 8 months; $P < 0.001$). We did not find a difference in the evolution between patients treated with DF and those treated with CF.

Conclusion. CF are of a great importance to ensure better compliance and synergistic effects of different antibiotics with a reduced duration.

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798. The Role of Whole-Genome Sequencing in Characterizing the Mechanism of Action of Anti-Tuberculosis Compounds: Demonstrated With Para-Amino Salicylic Acid and Its Analogue

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Background. Para-aminosalicylic acid (PAS) was one of the first antibiotics to be used against tuberculosis (TB) and it is still one of the last remaining drugs available to treat extensively drug-resistant (XDR) disease. Despite being on the market for decades, the mechanism of action of PAS is not completely understood yet. Sixteen new compounds against *Mycobacterium tuberculosis* were created in the laboratory as salicylate analogues (based on their chemical structures) and their antimycobacterial activity had never been tested before. The main aim of this project was to test the activity of these new analogues and to understand their mechanism of action (including PAS).

Methods. The compounds were tested using three different methods (spot culture, resazurin, and MGIT system). Additionally, resistant mutants were created against PAS and the most promising analogue; whole-genome sequencing (WGS) was performed to understand their mechanism of action.

Results. One compound in particular, AD25a, showed the lowest critical concentration (0.04 μg/mL) among the salicylate analogues. The WGS analysis identified a total of 28 single nucleotide polymorphisms (SNPs) in the AD25a-resistant mutants and 40 SNPs in the PAS-resistant mutants (when compared with the reference strain H37Rv). The SNPs identified in the AD25a and PAS-resistant mutants did not overlap. The genes *rrs*, *rrl* and *folC* were mostly involved in the PAS-resistant mutants.

Conclusion. The complete difference in the mutation profiles suggests that AD25a has a mechanism of action different to that of PAS, despite AD25a being synthesized as a salicylate analogue. WGS analysis of PAS-resistant mutants has also provided some interesting results. In particular, all our PAS mutants showed mutations in the *rrs* and *rrl* genes (16S and 23S RNA genes, respectively). These mutations should affect the ribosomes and the overall synthesis of proteins. This highlights a new potential mechanism of resistance for PAS that has never been observed before.

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799. Genetic Diversity of *Mycobacterium tuberculosis* Strains Causing Drug-Resistant Tuberculosis in Central Region of Mozambique: The Whole-Genome Sequencing

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Background. Knowing the genetic diversity of *M. tuberculosis* strains causing drug-resistant tuberculosis (DR-TB) in high burden TB and low resources countries such as Mozambique is a key factor to TB disease spread control and world TB epidemic control. Whole-genome sequencing (WGS) better describes molecular diversity,