Background. Infections caused by the multi-drug-resistant Mycobacterium abscessus complex (MabsC) are challenging to treat and often require multiple antimicrobials for a prolonged treatment course and still have poor outcomes. Clofazimine, an orally active drug, has demonstrated good in vitro susceptibility and is being increasingly employed in treatment regimens for MabsC infections. We performed a drug-use-evaluation of clofazimine in the treatment of MabsC infections.

Methods. A retrospective review was performed for all patients with MabsC infections treated with clofazimine-containing regimens from January 2014 to June 2017.

Results. Twenty-nine patients were included. Twelve patients had pulmonary MabsC infections and seventeen had extrapulmonary infections. All isolates had clofazimine minimum-inhibitory-concentration of 58.5 mg/L as tested by broth microdilution. Clofazimine was prescribed at initiation of therapy in 31.0% (9/29), as a companion drug during maintenance therapy after initial intravenous therapy in 44.8% (13/29) and as part of salvage therapy due to disease progression or drug intolerance in 24.1% (7/29) of patients. Dosing of clofazimine for the pediatric patients was prescribed at 1-2 mg/kg/day while the adult patients received a range of 50-200 mg/ day. Clofazimine was given for a median duration of 148.5 days (range: 14–1212) and most commonly in combination with clarithromycin (82.8%), amikacin (58.6%), and cefoxitin (24.1%). Twelve patients had documented adverse reactions attributable to clofazimine (skin hypopigmentation 66.7%, abnormal liver function tests 16.7%) and gastrointestinal disturbance (16.7%). Table 1 describes the patients who had clofazimine ceased due to an adverse effect. Nine patients with pulmonary MabsC infections and 16 with extrapulmonary MabsC infections had documented improvement in symptoms.

Conclusion. Clofazimine as a companion drug in the treatment of MabsC infections was reasonably tolerated over a prolonged period of its useability as an oral active agent makes it an attractive alternative to IV companion drugs and potentially improves compliance to the protracted treatment courses for patients with MabsC infections.

Table 1. Adverse effects reported with clofazimine use

| Adverse effect | No. of patients (% of n = 29) | No. of patients which had clofazimine discontinued | Median days of clofazimine received prior to cessation (range) |
|---------------|------------------------------|---------------------------------------------------|----------------------------------------------------------|
| Skin hypopigmentation | 2 (6.9)                      | 3                                                  | 94 (47–212)                                              |
| Transaminitis  | 2 (6.9)                      | 1                                                  | 112.5 (14-211)                                           |
| Gastrointestinal disturbance | 2 (6.9)                  | 1                                                  | 15                                                      |

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1351. How Do Infectious Diseases Clinicians Manage Patients with Suspected Ocular Tuberculosis? Results of an Emerging Infections Network Survey

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Background. Ocular tuberculosis (OTb) is uncommon and many ID physicians (IDPs) have limited experience with OT. Ophthalmologists now include IGRA in evaluating idiopathic uveitis, and some IDPs report increased referrals for possible OTb. Our goal was to understand how IDPs approach diagnosis, treatment, and reporting of OTb.

Methods. The Emerging Infections Network surveyed members treating adult ID patients in 2019 about referrals for suspected OTb. The survey used hypothetical case scenarios to evaluate factors influencing the management of possible OTb, and queried involvement of public health agencies.

Results. 754 of 1,379 (55%) physicians responded. 141 (19%) reported ≥1 referral for possible OTb in the past 3 years; 35% of these reported increasing referrals over time. Most frequent indications for referral were uveitis and positive IGRA (60%) and idiopathic uveitis without positive IGRA or TST (33%). For a hypothetical case with uveitis, positive IGRA but no other symptoms, respondents were much more likely (79% vs. 29%) to treat as TB disease if TB risk factors were present. Respondents were more likely to require a positive eye culture or NAAT prior to treating a risk-factor-negative patient (39% vs. 12%). 42% of respondents believed <10% of eye specimens had culture or NAAT-positive for suspected OTb. 94% would treat suspected OTb with INH, RIF, PZA ± EMB but duration of treatment varied with 27% stopping therapy for lack of clinical response and 59% continuing for at least 6 months regardless of response. 44% were unsure if improvement should be expected on therapy. One-third of respondents either did not report or reported only culture-confirmed OTb cases on treatment to public health agencies.

Conclusion. IDPs report increased referrals for possible OTb, mainly for idiopathic uveitis and positive IGRA’s. There is considerable practice variation in management of possible OTb. The decision to treat as TB disease is heavily influenced by TB epidemiologic risk factors, and there is heterogeneity in treatment duration and in expectation of response to therapy. Prospective studies to assess treatment responses in OTb and improved collaboration with ophthalmologists are necessary to better manage this emerging syndrome. Treated OTb cases should be reported to public health agencies.

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1352. The Burden of Active Tuberculosis in an Integrated Healthcare System, 1997–2016: Incidence, Mortality, and Excess Healthcare Utilization

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Background. Active tuberculosis (TB) often results from reactivation of latent tuberculosis infection (LTBI). This can be prevented through LTBI screening and treatment, yet only 12% of Californians have undergone LTBI therapy. Updated estimates on the complete burden of active TB are needed to rationally allocate resources for LTBI program implementation.

Methods. We identified all patients with microbiologically confirmed active TB in a large, integrated health system (Kaiser Permanente Northern California, or KPNC) from 1997 to 2016. We calculated active TB incidence in KPNC and measured this against California’s reported cases. Within KPNC, we compared mortality, hospital, emergency department, and ambulatory care use among persons with active TB versus those with LTBI, and year-of-diagnosis and matched cohort of persons without active TB.

Results. Active TB incidence was lower in KPNC (3.4/100,000 person-years) than in California (7.2/100,000 person-years). Among 2,522 active TB cases, early and delayed mortality was high with 7.0% dying within 1 year of diagnosis and 6.2% dying ≥5 years post-diagnosis. Of 1,159 active TB patients with continuous care in KPNC, 1 active TB patient had higher healthcare utilization than the matched cohort in the one year following diagnosis: 0.6 vs. 0.1 hospitalizations, 9.5 vs. 4.6 mean length-of-stay; 0.8 vs. 0.3 emergency department visits, and 14.6 vs. 5.9 ambulatory visits.

Conclusion. Patients with active TB disease have substantial mortality and high inpatient and outpatient healthcare utilization. By improving LTBI screening and treatment, large healthcare systems may be able to reduce the burden and costs associated with active TB.

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1353. Effect of Implementing Xpert MTB/RIF Ultra Assay on Diagnosis of Tuberculosis in a Medical Center in Central Israel

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Background. Tuberculosis (TB) is a worldwide public health concern both in developing and developed countries. The new Xpert MTB/RIF Ultra assay (Ultra, Cepheid, Sunnyvale, USA) recently endorsed by the WHO has high sensitivity to TB detection. The aim of this study was to assess the impact of this assay on the rate of TB diagnosis we compared TB tests and positive cases during two time periods: period I (1.1.2017-31.10.2017) when TB diagnosis was made with the diagnosis of PTB and period II (1.11.2017-30.10.2018) when TB diagnosis was made with the Xpert MTB/RIF Ultra assay. We included all TB tests performed on sputum, deep suction or bronchoalveolar lavage. Files of positive patients were reviewed.

Results. The study included 1034 samples from 717 patients. Results are presented in Table 1. During the second period, TB rates increased by 231%. During the entire study there was no change in the hospital’s guidelines regarding TB diagnosis policy and there was no epidemiological change in the population served by the hospital. Only three cases had rifampin resistance. In 5 cases (20%) during period II the result was trace amounts, an entity that did not exist in the former assay and in 3 cases culture results were negative. In 2017, 6 patients (60%) were African born, 3 patients (30%) originated from Eastern Europe, and one patient (10%) was born in the Middle East region. In 2018, 9 patients (36%) were born in Africa, 9 patients (36%) were born in Eastern Europe, and 7 patients (28%) were born in the Middle East region. Mean age at diagnosis was 38 years for patients diagnosed during period I and 53 years for patients diagnosed during period II.

Conclusion. The new assay enabled a significantly higher diagnosis rate for TB at our institution. We believe that this mainly reflects a higher diagnosis rate in patients with paucibacillary TB. Further study is needed to assess the relation between cultured confirmed diseases and the assay results, particularly in patients with trace results.