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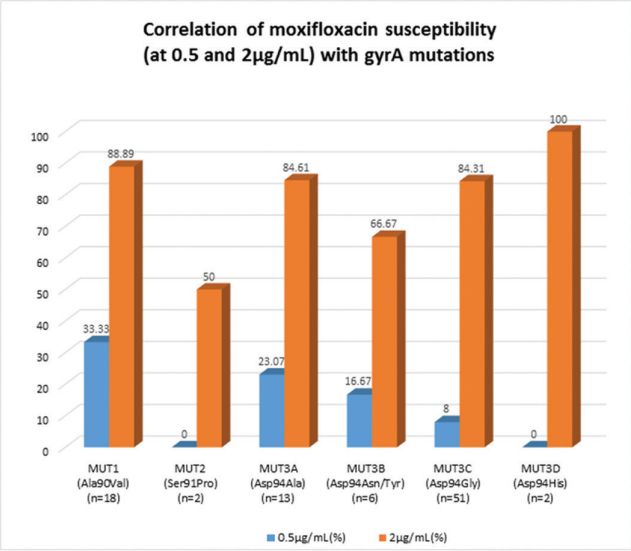
Background. This study was done to investigate the utility of specific fluoroquinolone mutations in LPA in predicting the susceptibility in DST at WHO recommended Critical Concentrations of 0.5 and 2 µg/dL of moxifloxacin within a short time frame as provided by LPA.

Methods. In a retrospective study performed at a tertiary care hospital of Mumbai, India from October 2015 to February 2017, consecutive samples demonstrating fluoroquinolone resistance by LPA were selected. The LPA kit used was Hain Lifescience Genotype MTBDRsl (Version 1). It detects the following mutations in gyrA gene: MUT1: Ala90Val, MUT2: Ser91Pro, MUT3A: Asp94Ala, MUT3B: Asp94Asn/Tyr, MUT3C: Asp94Gly, MUT3D: Asp94His. The causal mutation was noted. For 89 of these samples, DST had been requested and results with Critical Concentration of 0.5µg/dL and 2µg/dL for moxifloxacin were available

Results. The 89 samples studied were as follows: Sputum (n = 60), paravertebral soft tissue (n = 2), bronchoalveolar fluid (n = 2), cerebrospinal fluid (n = 1), endotracheal tube secretion (n = 1), pleural fluid (n = 1) and site not recorded (22). 3 of these samples had double mutations. Results are as follows.

Mutation in gyrA gene	Number of samples (n)	Susceptible at 0.5 µg/dL [n (%)]	Susceptible at 2 µg/dL [n (%)]
MUT1 (Ala90Val)	18	6(33.33)	16(88.89)
MUT2 (Ser91Pro)	2	0(0)	1(50)
MUT3A (Asp94Asn)	13	3(23.07)	11(84.61)
MUT3B (Asp94Asn/Tyr)	6	1(16.67)	4(66.67)
MUT3C (Asp94Gly)	51	4(8)	43(84.31)
MUT3D (Asp94His)	2	0(0)	2(100)



Conclusion. This study showed a higher proportion of *M. tuberculosis* susceptibility at 2 µg/dL rather than at 0.5 µg/dL, to moxifloxacin for gyrA mutations Ala90Val (MUT1), Asp94Ala (MUT3A), Asp94Gly (MUT3C), Asp94His (MUT3D) but not for Ser91Pro (MUT2) and Asp94Asn/Tyr (MUT3B). However, the number of samples with Ser91Pro (MUT2) and Asp94Asn/Tyr (MUT3B) mutations was too small for meaningful conclusion. This susceptibility at a higher critical concentration of moxifloxacin may have clinical implications for use of high dose moxifloxacin. Since this information is available within a short time frame as provided by LPA, a more effective regimen could be devised 4 to 8 weeks earlier than after results of DST. This may result in faster sputum conversion and prevent amplification of resistance.

Disclosures. **All authors:** No reported disclosures.

2108. Lateral Flow Urine Lipoarabinomannan Assay (LF-LAM) for Diagnosis of Active Tuberculosis in HIV-Infected Adults: a Prospective Cohort Study

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Background. Early diagnosis and treatment of active tuberculosis (TB) in HIV-positive patients is challenging. Tests based on the detection of mycobacterial lipoarabinomannan (LAM) antigen in urine have emerged as potential point-of-care tests for TB. However, limited data exists on their performance among HIV-TB co-infected patients from Southeast Asian countries.

Methods. We prospectively recruited HIV-positive adult patients with CD4 count less than or equal to 200/mm^3 and symptoms suspected of active TB from two tertiary hospitals between December 2015 and March 2017. Freshly collected urine was applied to the Determine®-TB LAM Ag test strip (4 bands of graded intensity), using grade 1 cutoff. Diagnostic accuracy of urine LAM strip test were assessed against microbiological reference standard, defined as positive *Mycobacterium tuberculosis* cultured from one or more clinical specimens (definite TB) or composite reference standard including definite TB and probable TB, defined as those have symptoms consistent with TB and response to anti-TB treatment.

Results. A total of 280 patients were enrolled. Of whom, 72 (25.7%) and 65 (23.2%) had definite and probable TB. Amongst those with definite TB, LF-LAM test gave a sensitivity of 75.0% (95% CI 63.9–83.6), specificity of 86.0% (95% CI 79.4–90.8) and accuracy of 82.3% (95% CI 76.7–86.8). When compared with the composite reference standard, the test yielded a lower sensitivity (61.3%, 95% CI 53.0–69.1) and accuracy (73.9%, 95% CI 68.5–78.7), with equal specificity. The test showed the highest sensitivity (90.5%, 95% CI 77.9–96.2) and accuracy (85.9%, 95% CI 79.2–90.7) but lower specificity (84.0%, 95% CI 75.6–89.9) in HIV-infected patients with CD4 count less than 50/mm^3. The sensitivity of the combined LF-LAM or sputum microscopy was higher than that of either test alone (86.1% vs. 75.0%, 61.1%, respectively). *Mycobacterium avium* complex (MAC) was cultured in 7 out of 20 with false positive result. Urine LAM strip test can remain positive for up to 4 weeks even after anti-TB treatment.

Conclusion. Urine LAM assay gave the best performance for diagnosis of active TB in advanced HIV-infected patients and provide an additional benefit of a greater simplicity, speed, with a more easily obtainable sample.

Disclosures. **All authors:** No reported disclosures.

2109. Improved Detection and Accuracy of *Mycobacterium* Species Identification from Paraffin Embedded Tissues of Patients by Using Multigene Targeted PCR and Sequencing

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Session: 239. Diagnostics Mycobacteriology

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Background. Prompt and accurate identification and differentiation of *Mycobacterium tuberculosis*-complex (MTBC) from non-tuberculous mycobacteria (NTM) is crucial for the selection of antimicrobial treatment and appropriate public health response. Diagnosis and characterization of mycobacteria is challenging due to diverse clinical presentations, lack of sensitivity of smear microscopy, and fastidious culture identification. Moreover, because of clinical suspicion of noninfectious conditions, specimens are often not processed for culture and formalin-fixed, paraffin-embedded (FFPE) tissues are the only specimens available. For rapid and accurate identification of Mycobacterium spp. from patient tissues, sensitive and specific molecular assays combined with other tissue-based methods are vital.

Methods. We extracted DNA from FFPE tissues from 931 patients with clinical and histopathological suspicion of mycobacterial infection (received during 2013–2016) and evaluated by multistage, multigene targeted *Mycobacterium*-genus, complexes-and species-specific PCR assays (targets including *16S rRNA, rpoB, groEL, IS6110, RLEP*) and sequencing. Tissues were also examined by acid-fast bacilli (AFB) stains and mycobacteria immunohistochemistry (IHC). Assays to detect mutations associated with drug resistance were performed on MTBC cases.

Results. A *Mycobacterium* species was detected in 465 (50%) cases by PCR and sequencing. Of these, 380 (82%) were positive by *Mycobacterium* PCR targeting 16S rRNA. 85 cases (18%), including 9 MTBC, 12 *M. avium* complex and 3 *M. leprae*, were positive by other PCRs. Co-infection of MTBC and NTM spp. was detected in 5 cases. Of 465 PCR positive cases, 327 (70%) showed immunostaining and 223 (48%) were AFB-positive. Molecular markers for drug resistance were detected in 9 out of 88 (10%) tested MTBC cases.

Figure 1. Mycobacterium Species Identified by PCR and Sequencing