Comparing Trends and Outcomes among HIV-Infected vs. HIV Uninfected Patients with Tuberculosis: A 5-Year Experience Within the Florida Department of Health in Hillsborough County

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Background. Although the rate of tuberculosis (TB) has significantly declined in the United States, elimination has plateaued. Florida is one of the states with the greatest number of cases. The majority of cases occur in foreign-born individuals. Human immunodeficiency virus (HIV) is also a major contributor. HIV-TB coinfection leads to reciprocal interactions with significant clinical impact. We aim to compare the risk factors, clinical findings, and outcomes among HIV-infected vs. HIV uninfected patients.

Methods. A retrospective cohort study of TB cases over a 5-year period (2012-2017) was conducted. All patients with HIV co-infection with age- and gender-matched HIV negative controls were included. The diagnosis of TB was made via clinical, microbiological, radiological, and/or PCR based methods. SPSS was used for statistical data analysis.

Results. A total of 411 TB cases were identified and 66 patients (33 HIV-infected plus 33 HIV un-infected) were eligible for inclusion. The median age was 49 years (range 22–70). The male to female ratio was 21:12 and 50% of patients had TB symptoms; the rest had abnormal imaging or lab finding. Cases were confirmed via positive sputum smear, culture, or PCR (Figures 1–3). Only 11 patients were lost to follow-up, thus 83.3% completed therapy. A total of 5 persons died (Table 1).

Conclusion. The rate of HIV-TB coinfection in the United States was 5.3% in 2018; higher among injection drug users, homeless persons, inmates, and alcoholics. In our study, the rate of HIV-TB coinfection was slightly higher (8%). The difference was not statistically significant in regards to foreign born, homelessness, and incarceration. Only 3 patients admitted to injection drug use and 9 used alcohol (all HIV negative). Traditionally, HIV-TB coinfected patients have extra-pulmonary TB with higher rates of negative sputum and are at increased risk of death. In our cohort, the difference was statistically significant ($P = 0.009$) only for cavitary TB (predominated in HIV un-infected) but no difference in outcomes was observed between the two groups. These findings suggest changing trends in HIV-TB coinfection which may be partly related to our setting and demographics but may be attributed to better access to care and antiretroviral therapy at large.

Table 1. Participant characteristics (N=66)

| Variable                        | TB-HIV negative N=33 | TB-HIV positive N=33 | p-value |
|--------------------------------|-----------------------|-----------------------|---------|
| Gender                         |                       |                       |         |
| Male                           | 21 (63.6)             | 21 (63.6)             | 1.000   |
| Female                         | 12 (36.4)             | 12 (36.4)             |         |
| Birth location                 |                       |                       |         |
| Domestic                       | 19 (57.6)             | 25 (75.8)             | 0.117   |
| Foreign born                   | 14 (42.4)             | 8 (24.2)              |         |
| Alcohol abuse                  |                       |                       | 0.002   |
| Yes                            | 9 (27.3)              | 0 (0)                 |         |
| No                             | 24 (72.7)             | 25 (75.8)             |         |
| Non IV drug use                |                       |                       | 0.427   |
| Yes                            | 5 (15.2)              | 2 (0.6)               |         |
| No                             | 28 (84.8)             | 31 (93.3)             |         |
| IV drug use                    |                       |                       | 0.236   |
| Yes                            | 3 (9.1)               | 3 (9.1)               |         |
| No                             | 30 (90.9)             | 30 (90.9)             |         |
| Homeless                       |                       |                       | 0.165   |
| Yes                            | 6 (18.2)              | 1 (3.0)               |         |
| No                             | 27 (81.8)             | 32 (97.0)             |         |
| Incarcerated                   |                       |                       | 1.000   |
| Yes                            | 3 (9.1)               | 2 (0.6)               |         |
| No                             | 30 (90.9)             | 31 (93.3)             |         |
| Reason for Consultation        |                       |                       | 1.000   |
| TB symptoms                    | 15 (45.5)             | 15 (45.5)             |         |
| Abnormal CXR                   | 9 (27.3)              | 10 (30.3)             |         |
| Incident finding               | 9 (27.3)              | 6 (18.2)              |         |
| TB confirmation                |                       |                       | 0.637   |
| Confirmed case                 | 26 (78.8)             | 25 (75.7)             |         |
| Clinical case                  | 2 (0.6)               | 2 (0.6)               |         |
| Provider case                  | 4 (12.1)              | 6 (18.2)              |         |
| Site                           |                       |                       | 0.523   |
| Pulmonary                      | 26 (78.8)             | 28 (84.8)             |         |
| Extra Pulmonary                | 1 (2.9)               | 5 (15.2)              |         |
| Imaging abnormality            |                       |                       |         |
| Cavitory                       | 17 (51.5)             | 6 (20.0)              | 0.009   |
| Miliary                        | 3 (9.1)               | 1 (3.0)               | 0.614   |
| Complicated Therapy            | 27 (81.8)             | 20 (60.6)             | 0.741   |
| Directly Observed              | 4 (12.1)              | 6 (18.2)              |         |
| Combination (DOT + Self-administered) | 24 (72.7) | 24 (72.7)             |         |
| Lost to Follow Up              | 6 (18.2)              | 5 (15.2)              |         |
| Dead                           | 2 (0.3)               | 3 (9.1)               | 0.067   |

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Tuberculosis and HIV Co-infection at a Tertiary Care Hospital in Thailand

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Background. TB is the most common opportunistic infections (OIs) among patients living with HIV and associated with morbidity and mortality. The objective of the study was to describe epidemiology and characteristics of TB in newly diagnosed HIV patients.

Methods. Retrospective study was conducted at Nakhonpathom hospital, a 722-bed tertiary care hospital in Thailand during October 2016 and September 2018. The data on demography and outcome were collected.
Results. There were 369 newly-HIV diagnosed patients. Of these, 182 patients (49.3%) presented with AIDS-defining illnesses. TB was the most common (80 patients), followed by PCP (49 patients), cryptococcal meningitis (13 patients) and invasive salmo-nellosis (6 patients). Medical records of 29 HIV-TB patients were incomplete and were excluded from the study. Out of 51 HIV-TB patients, the median age was 41 (range 18–63) years and 39 (76.5%) were male. The median CD4 counts was 62.5 (range 7–773) cells/µL. Twenty-six (51.0%) had only pulmonary TB, 13 (25.5%) had only extra-pulmo-nary TB, and 12 (23.5%) had disseminated TB. Among extra-pulmonary TB, TB lymph腺itis was seen in 13, followed by intralobular tuberculosis in 8, TB meningitis in 4, and TB pleural effusion in 3 patients. The mortality rate of HIV-TB in our study was 11.8%.

Conclusion. TB is the most common OIs that occurs among patients with advanced HIV disease. The outcome was unfavorable, with death in 11.8%. Strategies to improve early diagnosis and treatment are warranted.

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372. Prevalence of Urethral, Rectal, and Pharyngeal Gonorrhea and Chlamydia among Newly Diagnosed Filipino HIV Patients

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Background. The Philippines has the fastest-growing HIV epidemic in the Asia-Pacific. Concurrent sexually-transmitted infections increase the risk of HIV transmission and complications. The prevalence of Neisseria gonorrhoeae (NG) and Chlamydia trachomatis (CT) infection among Filipino HIV patients is unknown and screening is not universal. A symptomatic-based approach likely underestimates the prevalence of NG and CT among men who have sex with men (MSM). We determined the rectal, pha-ryngeal, and urethral prevalence of gonorrhea and chlamydia infection in our patient population using nucleic acid testing (NAT).

Methods. This is a single-center, prospective cross-sectional study at Philippine General Hospital. Following ethical approval and informed consent, pharyngeal, rectal, and urine samples from newly-diagnosed, treatment-naïve HIV adult patients were tested using the Xpert® CT/NG assay (Cepheid, Sunnydale, CA). Patients with recent (≤21 days) antibiotic use with activity against NG or CT were excluded. Demographic and clinical data were also collected.

Results. 46 subjects were enrolled. Mean age was 31 years (range 19–49), 83% (38/46) were male, 96% (44/46) were asymptomatic, and 92% (35/38) of the males were MSM. Median CD4 count was 225 cells/μL (range 0–1,335). The overall prevalence of NG and CT among men who have sex with men (MSM). We determined the rectal, pharyngeal, and urethral prevalence of gonorrhea and chlamydia infection in our patient population using nucleic acid testing (NAT).

Conclusion. The prevalence of CT and NG among newly diagnosed Filipino HIV patients at 33% is sufficiently high to warrant routine NAT screening. Urine testing alone will miss a significant number of cases in an MSM-predominant population. We recommend NAT screening of both urethral and rectal sites for newly-diagnosed Filipino HIV patients.

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374. Lymphogranuloma Venerereum (LGV) Outbreak Among People Living with HIV (PLWH): Michigan, 2015–2018

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Background. Sexually transmitted infections (STIs) have increased in recent years both nationally and in Michigan. At the same time, HIV prevention is shifting toward intense efforts to "ending the epidemic." Detecting and mitigating outbreaks, as well as monitoring co-infections in people living with HIV (PLWH), will be critical in these efforts. Lymphogranuloma venereum (LGV) is a sexually transmitted infection caused by a serovar of Chlamydia trachomatis and may present with proctitis, lymphadenopathy, or genital ulcers.

Methods. While not nationally reportable, LGV remains on the list of reportable conditions in Michigan. No cases were reported between 2009 and 2014, but from August 12, 2015 to December 4, 2018, 66 cases of LGV were identified in 66 patients and reported by providers and laboratories through the Michigan Disease Surveillance System (MDSS). These reported cases were analyzed by specimen collection date and matched to other communicable disease databases for HIV co-infection status and STI history using SAS 9.4.

Results. The outbreak was local to Southeast Michigan where all but three patients resided. 72% cases lived in Detroit (Figure 1). 94% of cases were co-infected with HIV, including 4 who were co-diagnosed within 30 days of LGV diagnosis. Among the 60 cases of PLWH (excluding co-diagnoses), 62% were virally suppressed (VS) and 32% were in care but not suppressed at the time of LGV diagnosis. The majority (88%) of outbreak patients had between 1 and 7 additional bacterial STIs in the two years prior to LGV. All reported cases were men who have sex with men (MSM) with two patients also reporting injection drug use (MSM/IDU).

Conclusion. Testing for LGV is not routine and in some settings not available so there are likely unreported cases missing from this outbreak analysis. HIV care outcomes differed from statewide estimates with outbreak patients more likely to be receiving care but not sufficiently engaged compared with all PLWH (Figure 2). A high proportion of cases with additional STI history combined with lower than average VS rate means transmission of HIV is likely. This highlights a need to integrate HIV care support with STI services. Additional analyses of HIV co-infection with syphilis or other STIs are needed to further inform these strategies.