

2267. The Effect of Opportunistic Infection (OI) Prophylaxis on the Gastrointestinal Microbiome (GI) and Immune Reconstitution (IR) in Veterans With HIV and AIDS

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Background. Due to antiretroviral therapy (ART), some patients do not achieve IR. Moreover, GI bacterial translocation may lead to a decrease in CD4 counts with an increase in IL-6 in blood. However, the effect of OI prophylaxis on the GI, bacterial translocation, and IR has not been studied in HIV+ veterans. Here we studied the gut microbiome and bacterial translocation in VA patients with (i) stable HIV on ART (controls), (ii) newly diagnosed HIV starting on ART (new dx) and OI prophylaxis, and (iii) resuming ART (resumers).

Methods. Blood and stool specimens from 16 controls, 4 new dx and 3 resumers were obtained at 3 visits, as well as clinical and virological data. PCR electrospay ionization mass spectrometry (ESI-MS) was performed on blood samples to detect bacteria, their metabolites and gut microbiome (deep sequencing bacterial 16S rRNA) was done on stool.

Results. There was no relation between CD4 count, log CFU, and immune reconstitution. Among control patients with a decrease in CD4 count <200, none took TMP-SMX. One of these control patients started TMP-SMX, while the other took atovaquone. Neither had TMP-SMX R GNRs nor a decrease in CD4 count <200, none took TMP-SMX. One of these control patients was done on stool.

Discussion. Quantitative cultures and gut microbiome (deep sequencing bacterial 16S rRNA) were obtained at 3 visits, as well as clinical and virological data. PCR electrospray ionization mass spectrometry (ESI-MS) was performed on blood samples to detect bacteria, their metabolites and gut microbiome (deep sequencing bacterial 16S rRNA) was done on stool.

Conclusion. The results of this study identify a unique constellation of biomarkers in HIV patients with CAP; this constellation of biomarkers consists of pro-inflammatory cytokines and regulators of extracellular matrix remodeling, hinting at the occurrence of an inflammatory and tissue injuring process in the lungs. This is supported by the restrictive ventilation pattern seen in this group of patients.

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2268. Clinical Difference of Mycobacterium haemophilum Infections Between HIV and Non-HIV-Infected Patients

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Background. Mycobacterium haemophilum has emerged as one of non-tuberculous mycobacteria which caused localized and disseminated infections in immunocompromised patients. Infections caused by this pathogen were rarely diagnosed and reported because it can grow only in hemoglobin-supplemented culture media.

Methods. We performed a case–control study at Siriraj hospital, the biggest tertiary care hospital in Thailand, to determine the clinical difference and treatment outcome of this infection between HIV-infected and non-HIV-infected individuals.

Results. From January 2012 to December 2017, there were 21 patients diagnosed with Mycobacterium haemophilum infections. Eight of them were HIV infected. Rest of the patients were non-HIV immunocompromised which SLE was the most common comorbidities (autoimmune diseases 6 patients, anti-IFN gamma auto Ab 2 patients, kidney transplant recipients 2 patients, diabetes mellitus 2 patients and nephrotic syndrome 1 patient). Most common clinical manifestation was cutaneous involvement (13 patients, 61.9%). The result revealed that HIV-infected patients were much younger in comparison with non-HIV-infected patients (mean age 39 ± 10 vs. 52 ± 14 years; P = 0.025). Disseminated infection was more common in HIV-infected patients (37.5% vs. 15.4%, P = 0.325) and three of eight HIV-infected patients (37.5%) had central nervous system involvement whereas none of non-HIV infected patients had it (P = 0.042). The prognosis was slightly worse in HIV-infected individuals (Unfavorable prognosis 27.5% in HIV-infected VS. 15.4% in non-HIV-infected patients; P = 0.325).

Conclusion. HIV infection is the most common immunocompromised condition related with Mycobacterium haemophilum infection. Central nervous system involvement is more common in HIV-infected patients.

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2269. HIV-Positive Individuals Who Report Being in Care Are Less Likely to Be Co-Infected With an STI; an Analysis of “Network Testing,” A Service Program Offering HIV and STI Testing Services to Individuals at Risk for HIV

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Background. The prevalence of STIs among people living with HIV (PLWH) has implications for HIV treatment as prevention and community efforts to stop the spread of HIV. We explored the factors associated with HIV/STI co-infection in HIV-positive individuals.

Methods. We analyzed data from our “Network Testing” service program, which was designed to expand HIV/STI testing services to high-risk individuals including gay, bisexual, and other men who have sex with men (MSM) in Chicago’s South side, a high HIV prevalent area. This program provides incentivized testing to participants and up to six referred individuals within their social network. The prevalence of selected STIs, including syphilis, gonorrhea, or chlamydia infection, among HIV-positive individuals was evaluated. Bivariate and multivariable logistic regression analyses were used to assess sociodemographic, testing history, and risk factors significantly associated with HIV/STI co-infection.

Results. Of the 295 HIV-positive individuals, 110 (37%) tested positive for at least one STI with 90 (32%) testing positive for syphilis, 23 (16%) for gonorrhea, and 12 (8%) for chlamydia. The median age was 27 years old and 91% of clients were MSM. In multivariable analyses, individuals who reported being in care were less likely to be co-infected (aOR=6.10, 95% CI: 1.87–19.90). We found no association with co-infection and other risk factors including multiple partners and condomless sex.

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Background. Syphilis has increased among people living with HIV (PLWH), particularly in men who have sex with men (MSM). Syphilis screening test should be routinely offered as part of comprehensive care for PLWH. We assessed the annual frequency of syphilis testing and positive test results in patients actively receiving care for HIV in Mexico City and its associated factors.

Methods. We retrospectively analyzed cohort data of patients receiving care for HIV in our clinic (2001–2017). We estimated the annual proportion of PLWH receiving care that was tested for Syphilis and the annual prevalence of Syphilis infection among those tested. We performed annual, cross-sectional analysis in patients receiving care. We included patients with at least one registered visit to the clinic each year and defined those that were engaged in care, as those with at least two visits separated by at least 3 months in a given year. To identify factors associated with being tested and with being infected we used multivariate logistic regression models with random intercepts and GEE using sex, age, education, socioeconomic status (SES), year, time in care, use of ART, being naive and having AIDS at enrollment, being engaged in care, and number of hospitalizations as independent variables.

Results. 2896 patients were included. The proportion of patients tested for syphilis increased from 21% in 2001 to 41% in 2017. The prevalence of syphilis increased from 7% to 21% during the same period with an early peak in 2003–2004 (Figure 1). Over time, the prevalence of re-infections increased substantially and accounted for the most positive test from 2013 onwards. Men, younger age, MSM, increasing education, time receiving care, number of hospitalizations and being engaged in care during the year were positively associated with being tested (Figure 2). Men, younger age, MSM, patients not receiving ARTs, those with AIDS at enrollment, and not being engaged in care were at higher risk of infection (Figure 3).

Conclusion. Annual VDRL testing increased over time, as did prevalence of syphilis, particularly after 2010 (9% vs. 21%). Re-infections were frequent. Efforts are needed to increase screening among women, those newly enrolled in care, and with low SES. Preventive strategies are needed for men, particularly MSM, early after enrollment.

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2271. Adherence to Pre-Exposure Prophylaxis Is Associated With Sexually Transmitted Infections Among Men Who Have Sex With Men in the Deep South
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Background. Pre-exposure prophylaxis (PrEP) reduces HIV acquisition, but there are reports of high sexually transmitted infection (STI) rates among PrEP clients, possibly related to high-risk sexual behaviors (risk compensation). The study objective was to identify the prevalence and facilitators of STIs among men who have sex with men (MSM) at a Deep South PrEP clinic.

Methods. This was a retrospective analysis of MSM aged ≥18 years receiving STI testing at a university-affiliated PrEP clinic in Birmingham, AL from 2014 to 2018. Clients were screened for gonorrhea and chlamydia in the oropharynx, urine, and rectum by nucleic acid amplification test and syphilis by serological testing at least every 6 months. Results of STI testing and biannual patient-reported outcomes (PROs) for condomless anal sex, numbers of sexual partners within the last 3 months, and PrEP adherence were analyzed. The outcome of interest was any positive STI. We evaluated the association of STIs with these PROs using logistic regression.

Results. 141 MSM met study criteria: 29 (21%) were age 18–24, 39 (28%) identified as black, 25 (18%) reported consistent condom use, 22 (17%) reported >7 sexual partners in the past 3 months, 97 (69%) were prescribed PrEP, and 41 (29%) had at least one positive STI test. By univariate analysis, sexual partner number >7 and PrEP adherence were significantly associated with STIs; age and race were not. In multivariable analysis (Table 1), >7 sexual partners and PrEP adherence were independently associated with STI infection.

Conclusion. In a university-based PrEP Clinic in the Deep South, STIs were common in MSM. Our findings suggest that risky sexual behaviors among PrEP clients contribute to STIs, especially for those reporting PrEP adherence and high number of sexual partners, and highlight STI prevention opportunities.

Table 1: Multivariable Analysis of STIs Among PrEP Clients at a University-affiliated PrEP Clinic

<table>
<thead>
<tr>
<th>Variable</th>
<th>With STI N (%)</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consistent Condom use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes*</td>
<td>5 (14)</td>
<td>1.6 (0.5–5.2)</td>
</tr>
<tr>
<td>No</td>
<td>28 (76)</td>
<td></td>
</tr>
<tr>
<td>Number partners/3 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>2 (5)</td>
<td>3.5 (0.3–38.3)</td>
</tr>
<tr>
<td>1*</td>
<td>5 (13)</td>
<td>1.7 (0.5–5.4)</td>
</tr>
<tr>
<td>&gt;7</td>
<td>18 (46)</td>
<td>9.7 (2.4–40.2)</td>
</tr>
<tr>
<td>Adherence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not on PrEP*</td>
<td>7 (17)</td>
<td>1.3 (0.3–5.1)</td>
</tr>
<tr>
<td>Missed Dose 0–2 weeks ago</td>
<td>5 (12)</td>
<td>4.7 (1.4–15.4)</td>
</tr>
<tr>
<td>Missed Dose &gt;2 weeks ago</td>
<td>29 (71)</td>
<td></td>
</tr>
</tbody>
</table>

*denotes referent

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