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Background. HIV patients face higher rates of morbidity compared with the general population, largely due to the earlier development of age related diseases (cardiovascular, kidney, and liver disease). While it is likely that chronic immune activation and inflammation are the main contributors to this process, it's relation to lung injury in HIV remains unknown. Despite restoration of systemic immune function following Antiretroviral Therapy, the risk for lower respiratory tract infection remain elevated in the HIV population. The objective of the study was to assess the relationship between pulmonary inflammation and lung injury.

Methods. A prospective cohort study was performed, participants include patients hospitalized in Hospital Universitario San Vicente Fundación and Clínica SOMA, in Colombia. Patients were eligible if they were over the age of 18 and had a documented HIV infection or if they have HIV with newly diagnosed community acquired pneumonia (CAP). The main exclusion criteria were chronic lung disease and immunosuppression that is not due to HIV. Patients belonged to two groups: HIV and HIV + CAP. Plasma, sputum samples and pulmonary function test measurements (PFT) were retrieved within 48 hours of hospital admission and at one month follow-up. The concentrations of 13 biomarkers were measured and correlated with PFT values, followed by a comparison between the two groups.

Results. Principle Component Analysis revealed that CCL3, CCL4, BAFF, APRIL, and TIMP-1 accounts for the majority of the variation between the two groups. Furthermore, Kruskal–Wallis testing demonstrates that BAFF and CCL3 are elevated in the HIV + CAP group, compared with the HIV group ($P < 0.005$). Other markers of bacterial translocation and monocyte activation did not differ between these groups. FVC and FEV_1 measurements are lower in the HIV + CAP group compared with the HIV group, while FEV_1/FVC remain constant.

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

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Background. Despite 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 GIM, 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 electrospray ionization mass spectrometry (ESI-MS) was performed on blood samples to detect bacteria. Quantitative cultures and gut microbiome (deep sequencing bacterial 16S rRNA) was done on stool.

Results. There was no relation between CD4 count, log CFU TMP-SMX-resistant Gram-negative bacteria (GNRs) or total anaerobes. Except for 2 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 in stool, despite low CD4 /TMP-SMX. Major stool phyla in controls were Bacteroidetes (37 ± 19%), Firmicutes (37 ± 14%), Proteobacteria (15 ± 14%); while resumers had 54 ± 15% Bacteroidetes, 33 ± 12% Firmicutes and 7 ± 1% Proteobacteria. Only one new dx individual had CD4 count <200 at dx and took doxycycline initially for hidradenitis supparativa. Dapsone was initiated due to sulfa allergy. He was also diagnosed with lung cancer, treated with resection/XRT and received cefazolin. His VL became undetectable but CD4 <200. He had persistence of TMP-SMX-resistant GNRs despite dapsone and a shift in his GIM was observed over the first 6 months of care, i.e., Bacteroidetes decreased from 61.5% to 29.5% and Firmicutes increased from 30.6% to 53.3%.

Conclusion. OI prophylaxis does not affect the GIM of stable HIV VA patients on ART. TMP-SMX-resistant GNRs in stool are unrelated to TMP-SMX exposure or CD4 count. Other antibiotics such as doxycycline can alter GI microbiota and may affect immune reconstitution.

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

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Background. *Mycobaterium haemophilum* has emerged as one of nontuberculous 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 heme 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). The 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 Individual 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 (adjusted odds ratio [aOR] 0.45, 95% confidence interval 0.23–0.90). Additionally, participants who reported having a previous STI test were more 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.

Conclusion. The high STI prevalence among HIV-positive individuals suggests: 1) a continued need for regular STI testing and treatment among PLWH to reduce the likelihood of HIV transmission to others; and 2) the receipt of HIV care serves as an important opportunity to provide comprehensive services including STI testing/treatment.