555. HIV/AIDS and Cryptococcosis in Costa Rica

Juan Villalobos, Medical Doctor[1] and José Castro, Medical Doctor[2]; [1]Infectology, Hospital México - Caja Costarricense de Seguro Social, San Jose, Costa Rica, [2]Dirección De Farmacoepidemiología, Caja Costarricense de Seguro Social, San José, Costa Rica

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Background. To describe the epidemiological behavior of the co-infection with HIV/Cryptococcosis in Costa Rica in the period of 2002 to 2015.

Methods. This is a retrospective descriptive study of incidence, based on hospital discharge registries of the Social Security Health System, and data from the Ministry of Health of Costa Rica. The annual incidence of HIV infection per 100,000 inhabitants was established, as well as the percentage of AIDS cases. Incidence and annual mortality of cryptococcal infection per 1,000 HIV-infected patients, and per 100 cases of AIDS were also analyzed. Distribution by age, sex and site of infection were documented.

Results. The incidence of HIV for the first quinquennium was 11.4 cases per 100,000; in the second it was 12.4, and the third we found it increased to 15.8. In contrast, the percentage of AIDS decreased progressively from 11.5%, to 4.3% and 1.2% respectively. During this period, a total of 193 cases of cryptococcosis were identified in persons living with HIV, giving an accumulated incidence of 3.38 cases per 1000 patients HIV-infected per year. Analysis of the three quinquennia showed a progressive decrement in the incidence of cryptococcosis of 5.13, 3.43, and 2.63 cases per 1,000 patients per year. Such a reduction was statistically significant ($P < 0.001$). Cryptococcosis affected men more than women (RR = 2.42; CI 95% 1.53-3.84). Median age was 34 years with an interquartile interval of 29 to 40 years. Cryptococcal meningitis was the most common presentation. The incidence of cryptococcosis in patients with AIDS during the different quinquennia demonstrated an increment from 4.47% to 8% and up to 21.86% respectively; this finding was statistically significant ($P < 0.001$). Mortality of patients with AIDS showed an increasing trend comparing the first with third quinquennia, from 20% to 29% ($P = 0.27$).

Conclusion. The incidence of HIV infection is increasing in Costa Rica, and the incidence of AIDS is decreasing. However, the incidence of cryptococcosis in patients with AIDS increase progressively with a correlative increase in mortality.

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

556. Characteristics and Outcomes of Patients with *Pneumocystis jirovecii* Pneumonia Who Were Initiated on Antiretroviral Therapy While Hospitalized: A Preliminary Study

Pooja Shah, MD[1]; Ciarra Dortche, MPH[2] and Nada Fadul, MD[2]; [1]Infectious Disease, East Carolina University, Greenville, North Carolina, [2]Internal Medicine, East Carolina University, Greenville, North Carolina

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Background. Pneumocystis jirovecii pneumonia (PJP) is the most frequent and severe respiratory infection in patients with acquired immunodeficiency syndrome (AIDS) with associated 20% mortality. There have been conflicting data regarding the optimal time to initiate antiretroviral therapy (ART) in these patients with most data suggesting benefit for early initiation. The objectives of this study were to compare patients with PJP and AIDS who were initiated on ART while hospitalized compared with those who were not; and to evaluate the association between inpatient initiation of ART and survival.

Methods. We conducted a retrospective chart review of patients 18 years or older with PJP and AIDS who were not on ART prior to admission. We collected demographic, laboratory and clinical information. SPSS was used to compare the two groups: those who initiated ART while inpatient (ART) vs.. those who did not (NoART)

Results. Of the 64 patients included in this study, 25 [39%] were in the ART group, 19 [27%] required intensive care unit (ICU), and 16 [25%] required mechanical ventilation (MV). There were no differences in age, gender, race/ethnicity, and smoking between the ART and NoART groups. A higher percentage of patients in the ART group received corticosteroids (96% vs. 72%; $P = 0.020$), required MV (48% vs.10%; $P = 0.001$), and ICU admission (60% vs. 10%; $P = 0.000$) than in the NoART group respectively. There were no differences in the ART and NoART groups in regards to ICU stay (4 vs. 0.5 days; $P = 1.000$) and APACHE II scores (15.2 vs. 10.7; $P = 0.17$). A total of 9 (14%) patients died while in the hospital 6 (24%) in ART vs.. 3 (8%) in NoART ($P = 0.137$).

Conclusion. Patients with PJP pneumonia who were initiated on ART while inpatient were more likely to require ICU admission, corticosteroids, and mechanical ventilation. There were no differences in APACHE II scores, CD4 count and mortality between those who initiated ART while inpatients vs. those who did not. Further studies with larger sample size are needed to evaluate the association between inpatient initiation of ART and survival.

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

557. Using a Validated Calculator to Assess the Risk of Disease Progression and Treatment Completion in Patients with Human Immunodeficiency Virus Infection and Latent TB

Michael Scolarici, BS[1]; Ken Dekitani, BS[1] and Soumya Chatterjee, MD[2]; [1]Saint Louis University School of Medicine, St. Louis, Missouri, [2]Doisy Research Center, Saint Louis University, St Louis, Missouri

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Background. HIV-infection leads to a higher risk of progression from asymptomatic, non-transmissible latent tuberculosis infection (LTBI) to active tuberculosis (TB). Specific comorbid medical risk factors increase this risk which can be decreased by successfully treating LTBI.

Methods. We compared risk of progression between HIV infected and uninfected adults seen at the Saint Louis University hospital from 2010 to 2015 using a validated online calculator (tstin3d.com). We also recorded information on prescribing practices and treatment completion rates in the two groups.

Results. Of 125 patients included, 10 had HIV, 10 AIDS, and 105 HIV-uninfected. The median annual TB-risk amongst the three groups was 8% (3–8%), 22% (21–25%), and 0.5% (0–6%) respectively. Smoking, recent TST/IGRA conversion, and diabetes were more prevalent among HIV/AIDS patients. Nine months of INH was most commonly prescribed for both HIV/AIDS (85%) and HIV-uninfected groups (45%). Of concern, were the equivalent rates of LTBI treatment non-completion seen between HIV/AIDS than HIV-uninfected patients (35% vs. 34%).

Conclusion. TSTin3D.com can facilitate increased provider awareness of TB activation risk factors and can quantitate risk of reactivation. We are currently implementing the calculator in the clinic to prospectively study how risk stratification can alter treatment choices for LTBI patients at highest risk for progression to TB.

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

558. Integration of Tuberculosis (TB) Screening in The Ryan White Program in Arkansas

Mofan Gu, MPH[1]; Naveen Patil, MD MHSA MA[2]; Lori Fischbach, PhD[1]; Tiffany Vance, MBA[2]; Charles Bedell, MD MPH[2] and Leonard Mukasa, MBChB PhD[2]; [1]Epidemiology, University of Arkansas for Medical Sciences, Little Rock, Arkansas, [2]Arkansas Department of Health, Little Rock, Arkansas

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Background. Globally, TB remains the most common cause of death among people with HIV (killing 1 in 4 patients). In the US, the conservative estimate of HIV-LTBI burden is 48,000. Population-based TB-HIV data are not available due to inadequate TB screening among the HIV-infected. In the previous study we found that recommendation for TB screening is missing in HIV guidelines in 36 out of 50 (72%) US states, and TB screening data are missing in half of the Ryan White Programs.

Methods. We aim to assess the current surveillance structure and prevalence of TB screening among Ryan White clients in Arkansas, and inform revisions of guidelines. We interviewed ADH staff (including Ryan White program manager, data specialist, Infectious Disease branch manager, and TB epidemiologist) to map out how TB screening is supposed to be reported in the Ryan White Program. We also assessed data availability and quality in both CAREWare and electronic client dossiers. After evaluation, we created a user-defined data field in CAREWare for pilot testing. Then we had meetings involving both the Ryan White Program and the TB Program for discussion.

Results. The data flow is shown in Figures 1 and 2. We found no TB screening files in Ryan White client dossiers. The existing TB data structure in CAREWare is confusing, with duplicate variables (both active and inactivate) in multiple sub-tabs. We proposed a user-friendly data field for TB screening (date, type of tests, result, and interpretation). We made three policy changes at the ADH: a memorandum of understanding between the Ryan White Program and the TB Program to improve communications, a modified contract (effective March 2017) with Ryan White providers that mandates annual TB screening for all clients, and an official letter to all physicians in Arkansas addressing the importance of TB screening among HIV-infected people.

Conclusion. We believe that program collaboration and service integration between TB and HIV is the key in eliminating missed opportunities in TB-AIDS diagnoses. In our next steps, we want to evaluate the data captured in CAREWare between 2016 and 2017. We also want to question why individual level data, which should include TB screenings, are not reported to the HRSA.
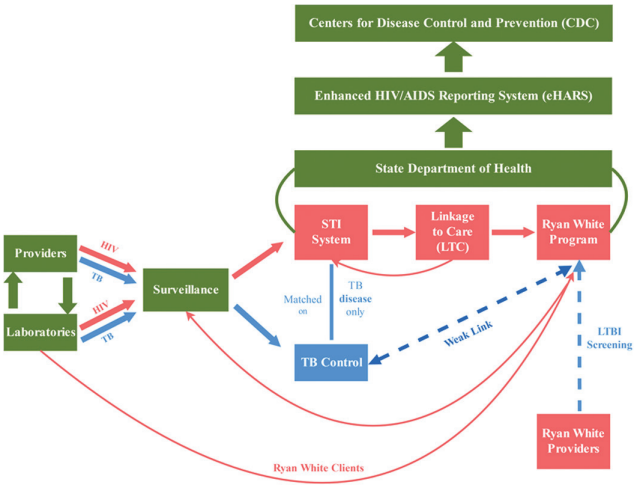
Figure 1. TB and HIV reporting system in the USA.