

determine screening frequencies for potential comorbid conditions, including tuberculosis, hepatitis B and C, type 2 diabetes, and three sexually transmitted infections (STI), and to assess demographic and clinical factors associated with screening in the previous 12 months.

Results. In the NYC MMP cohort ($N = 439$), 18% of patients were screened for hepatitis B, 26% for hepatitis C, 37% for type 2 diabetes, 38% for gonorrhea, 41% for chlamydia, 42% for tuberculosis, and 46% for syphilis in the past year. In multivariate analyses, having three or more medical visits with a CD4 count or viral load test during the year was significantly associated with STI screening (OR = 3.84, 95% CI: 1.94, 7.57) and hepatitis C screening (OR = 3.45, 95% CI: 1.65, 7.21). Hispanic PLWH were more likely to be screened for hepatitis C (OR = 1.72, 95% CI: 1.05, 2.81) and non-Hispanic Whites were less likely to be screened for type 2 diabetes (OR = 0.30, 95% CI: 0.10, 0.88), compared with non-Hispanic Blacks. Self-reported sexual risk behaviors and history of injection drug use were not associated with screening for STI and hepatitis C, respectively.

Conclusion. We found a range of screening frequencies for comorbid conditions among PLWH in medical care during 2012, indicating a need for improved integration of HIV care with other clinical services. More frequent HIV care was associated with screening for STI and hepatitis C, possibly due to increased opportunity for testing or care related to the screened-for condition. Notably, we found no relationship between established risk factors for STI and hepatitis C and screening for these conditions.

Disclosures. All authors: No reported disclosures.

562. The Prevalence of *Legionella* Species as a Co-pathogen in HIV-Associated Community-Acquired Pneumonia

Breanne Head, MSc, PhD Candidate¹; Adriana Trajtman, MSc¹; Kathryn Bernard, MSc²; Tamara Burdz, MSc²; Lázaro Vélez, MD³; Zulma Rueda, MD, PhD⁴ and Yoav Keynan, MD, PhD¹; ¹Department of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, Canada, ²National Microbiology Laboratory PHAC, Winnipeg, MB, Canada, ³Universidad de Antioquia, Medellín, Colombia, ⁴Universidad Pontificia Bolivariana, Medellín, Colombia

Session: 63. HIV Clinical Care and Outcomes

Thursday, October 5, 2017: 12:30 PM

Background. Due to the lack of clinical suspicion, poor diagnostic performance, increased patient immunosuppression, and the increased chance of co-infection, HIV-associated *Legionella* community-acquired pneumonia (CAP) is currently under-reported. Thus, this study aimed to determine the frequency of *Legionella* in CAP-infected HIV patients.

Methods. Following initial diagnosis, DNA extracted from bronchoalveolar lavage (BAL) from CAP-infected HIV patients hospitalized at Hospital San Vicente Fundación in Medellín, Colombia were assayed for the presence of *Legionella* species (PAN *Legionella*, *L. Anisa*, *L. bozemanii*, *L. micdadei*, *L. pneumophila* and *L. pneumophila* serogroup 1) using singleplex real-time PCR (qPCR). Results were validated with agarose gel electrophoresis and reconfirmed using pre-amplification qPCR.

Results. Of the 59 HIV-infected individuals in the study, majority were non-smokers (64.4%), male (77.9%), and highly immunosuppressed (CD4 cell count <200 cells/ μ L). Initial CAP diagnoses were *M. tuberculosis* (37.3%), *P. jiroveci* (32.2%) and others (30.5%). Initial screening of pooled BAL samples indicated that majority of positive PAN *Legionella* were associated with *M. tuberculosis* and *P. jiroveci*. Of the 14 individual *M. tuberculosis*-infected patient BAL assayed, 10 were positive for PAN *Legionella*. Likewise, 6/9 *P. jiroveci*-infected BAL were also positive. Of all of the detected *Legionellaceae* infections, 31.3% were *L. Anisa*, 25.0% *L. bozemanii*, 18.8% *L. pneumophila*, and 12.5% *L. micdadei*, and 37.5% uncharacterized. Interestingly, none of the *L. pneumophila* infections were due to serogroup 1. Of note, all *L. bozemanii* and *L. micdadei* infections were associated with *P. jiroveci*, while all *L. pneumophila* infections were associated with *M. tuberculosis*. *Legionella*-infected patients had more complications and higher mortality rates compared with un-infected patients.

Conclusion. Results indicate that *Legionella* are prevalent in the BAL of HIV co-infected patients. Clinicians should be aware of the possibility of the presence of *Legionella*—and not just *L. pneumophila*—in HIV-associated CAP. The role *Legionella* plays in clinical presentation, disease severity and inflammation remains to be determined. If further investigation supports these findings, this could change the way that CAP is managed in HIV-infected individuals.

Disclosures. All authors: No reported disclosures.

563. Performance of Early-Warning Scores in Predicting Mortality in an HIV-Infected Population with Sepsis in Uganda

Amir Abdallah, MBChB MMED¹; Riley Hazard, BA² and Christopher Moore, MD³ ¹Medicine, Mbarara Regional Referral Hospital, Mbarara, Uganda, ²College of Arts and Sciences, University of Virginia, Charlottesville, Virginia, ³Medicine, University of Virginia, Charlottesville, Virginia

Session: 63. HIV Clinical Care and Outcomes

Thursday, October 5, 2017: 12:30 PM

Background. Early-warning scores (EWS) have the potential to improve resource allocation and hasten care in sub-Saharan Africa (SSA). Despite the high prevalence of HIV infection in SSA, current EWS do not take into account HIV serostatus.

Methods. We conducted a retrospective study at Mbarara Regional Referral Hospital (MRRH) in Uganda to evaluate the performance of CRB-65, modified early-warning score (MEWS), quick sepsis-related organ failure assessment (qSOFA), rapid acute physiology score (RAPS), rapid emergency medicine score (REMS), South

African triage scale (SATS), and shock index (SI) in predicting mortality among HIV-infected patients presenting with sepsis. We included patients admitted with sepsis to MRRH between January 2014 and December 2015 that had an HIV-positive serostatus and at least one valid heart rate, respiratory rate, systolic blood pressure, diastolic blood pressure, temperature, and oxygen saturation. Glasgow coma scale was imputed with the median. We used the area under the receiver operating curve (AUC) with tenfold cross-validation to assess the performance of each EWS.

Results. Of the 193 patients, the median (interquartile range) age was 34 (27, 42) years, 87 (45.0%) were female and 65 (44.6%) died. The AUC (95% confidence interval) was 0.53 (0.43, 0.62) for CRB65, 0.53 (0.44, 0.62) for MEWS, 0.57 (0.46, 0.68), for qSOFA, 0.60 (0.51, 0.69) for RAPS, 0.55 (0.46, 0.63) for REMS, 0.53 (0.45, 0.62) for SATS, and 0.54 (0.46, 0.63) for SI.

Conclusion. The ability of EWS to predict mortality in an HIV-infected patient population with sepsis in Uganda was poor. EWS used in SSA should be derived from African patient populations and adjust for HIV serostatus.

Disclosures. All authors: No reported disclosures.

564. Hearing Loss and Quality of Life Among Human Immunodeficiency Virus (HIV)-Infected and Uninfected Adults

Nikki Duong, MD; Internal Medicine, Georgetown University Medical Center, Washington, DC

Session: 63. HIV Clinical Care and Outcomes

Thursday, October 5, 2017: 12:30 PM

Background. Research has established that human immunodeficiency virus (HIV) causes hearing loss. Studies have yet to evaluate the impact on QOL. This project evaluates the effect of hearing loss on QOL by HIV status.

Methods. The study participants were from the Multicenter AIDS Cohort Study (MACS) and the Women's Interagency HIV study (WIHS). A total of 248 men and 127 women participated. Pure-tone air conduction thresholds were collected for each ear at frequencies from 250 through 8000 Hz. Pure-tone averages (PTAs) for each ear were calculated as the mean of air conduction thresholds in low frequencies (i.e., 250, 500, 1,000, and 2,000 Hz) and high frequencies (i.e., 3,000, 4,000, 6,000, and 8,000 Hz). QOL (QOL) data were gathered with the Short Form 36 Health Survey and MOS-HIV instrument in the MACS and WIHS, respectively. A median regression analysis was performed to test the association of PTAs with QOL by HIV status.

Results. There was no significant association between hearing loss and QOL scores at low and high pure-tone averages in HIV-positive and negative individuals. HIV status, HIV biomarkers and treatment did not change the lack of association of low and high pure-tone averages with poorer QOL.

Conclusion. Although we did not find a statistically significant association of hearing loss with QOL by HIV status, testing for hearing loss with aging and recommending treatment may offset any presumed later life decline in QOL.

Disclosures. All authors: No reported disclosures.

565. Cutaneous Diseases among an Aging HIV Cohort, Receiving Care at an Infectious Diseases/Primary Clinic

Alexis Tracy, BS¹; Sean O'Neill, MD²; Jose Cadena, MD/ID¹; Catherine Kowalewski, DO² and Elizabeth Walter, MD, FACP²; ¹University of Texas Health Science Center, San Antonio, Texas, ²South Texas Veterans Health Care System, San Antonio, Texas

Session: 63. HIV Clinical Care and Outcomes

Thursday, October 5, 2017: 12:30 PM

Background. Since the initial description of HIV/AIDS in the USA, cutaneous manifestations have been important in the diagnosis of the disease, and have been frequently associated with immune dysfunction. We sought to describe current dermatologic manifestations in our HIV seropositive veterans who are greater than 50 years of age and compare these to recent reports in HIV seronegative individuals.

Methods. This was a retrospective cohort study performed at the South Texas Veterans Health Care System Immunosuppression Clinic. The aim was to review the charts of older HIV-positive veterans with a minimum age of 50, evaluated from January 1, 2015 to December 31, 2015, to investigate any manifestations of cutaneous pathology, HIV and non-HIV-related, analyze the correlation of the dermatological diagnoses made by the ID physicians and those made by dermatologists, and stratify the findings by age and CD4 counts.

Results. Two hundred and Forty-one of the 381 HIV seropositive clinic patients met the criteria (236 males, 5 females), the mean age was 59.95 \pm 7.41. The median CD4 count was 446 cell/ mm^3 . There were 558 dermatological diagnoses made in the year of 2015, 172 of these were new diagnoses. Of the 38 patients also seen by dermatologists for the presenting skin condition, 57.9% of the diagnoses agreed with the diagnosis from the referring infectious disease provider.

New Diagnosis	Cases % (total 241 patients)
Syphilis	5.39% (13)
Actinic keratosis	4.98% (12)
Seborrheic keratosis	4.56% (11)
Seborrheic dermatitis	4.56% (11)
Onychomycosis	3.73% (9)

AIDS-defining cutaneous pathologies	No. of new cases	No. of remote cases
Coccidiomycosis	1	0
Cryptococcosis	0	9
Chronic herpes complex	3	16
Histoplasmosis	0	2
Kaposi Sarcoma	0	4

Conclusion. Dermatologic manifestations continue to be common in our aging HIV seropositive population. The most common diagnosis was syphilis, reflecting an ongoing epidemic of this disease in this population, followed by more common diagnoses of actinic keratosis, seborrheic keratosis, seborrheic dermatitis and onychomycosis. Comparison within the population of more current dermatologic diagnoses with more remote diagnoses shows fewer dermatologic manifestations of cryptococcosis, chronic herpes simplex, histoplasmosis and Kaposi Sarcoma.

Disclosures. All authors: No reported disclosures.

566. When Viral Suppression Is Not Enough: Clinical Characteristics of HIV Infected Patients with Poor Immune Recovery

Siddhi Mankame, MD¹; Negin Niknam, MD²; Mohammed Elfekey, MBBS³; Rebecca Schwartz, PhD⁴; Rehana Rasul, MA, MPH⁵; Bruce Hirsch, MD⁶ and Joseph McGowan, MD¹; ¹Infectious Diseases, Hofstra Northwell School of Medicine, Manhasset, New York, ²Infectious Disease, Hofstra University, North Shore - LIJ Hospital, Manhasset, New York, ³Infectious Diseases, NYC Department of Health, New York, New York, ⁴Department of Occupational Medicine, Epidemiology and Prevention, Northwell Health, Hofstra Northwell School of Medicine, Manhasset, New York, ⁵Infectious Diseases, Northwell Health, Feinstein Institute of Medical Research, Manhasset, New York, ⁶Infectious Disease, Hofstra Northwell School of Medicine, Manhasset, New York

Session: 63. HIV Clinical Care and Outcomes
Thursday, October 5, 2017: 12:30 PM

Background. The use of combination antiretroviral therapy (ART) has made it possible to halt HIV replication, achieve CD4+ recovery and immune reconstitution. Some patients with long-term viral suppression never adequately recover their CD4+ count and manifest increased mortality. Age, CD4+ nadir, Hepatitis C infection have been associated with incomplete immune recovery. By matching for age, gender, and CD4 nadir, we aim to elucidate the role of clinical factors in virally suppressed patients with suboptimal CD4 recovery.

Methods. Retrospective record review of patients with CD4 <200 (Cases) and CD4 >500 (Controls) with over 2 years of viral suppression (viral load <200) on ART for the same duration, was conducted. One case was matched to 2 controls by age, gender and CD4 nadir. Associations between variables were assessed using univariable exact conditional logistic regressions.

Results. Of the 1265 charts reviewed, 13 cases were identified. A unit higher BMI was significantly associated with a 13% lower odds of having low CD4 ($P = 0.04$). Higher hemoglobin A1c (A1c) was associated with 82% lower odds of having low CD4 ($P = 0.02$). Other non-significant comparisons include ethnicity; 33% cases were Hispanic vs. 16% controls. Gastrointestinal (GI) symptoms were more common in the cases (83% vs. 50%), as was lymphadenopathy (LAD) (36.4% vs. 25%). Mean years since diagnosis was longer in cases (19.2 vs. 16.7) despite the duration of ART being longer in controls. Mean number of comorbidities was higher in cases (3.17 vs. 2.75). Controls had more statin use (45.8% vs. 25%).

Conclusion. Incomplete CD4 recovery was significantly associated with lower BMI, suggesting that despite viral suppression, these patients are vulnerable to metabolic issues that affect uncontrolled HIV patients. We hypothesize that rapid control of HIV in this suburban population was associated with weight gain and note that the BMI in controls was in the obesity range. Statin use may play a protective role in the controls, perhaps due to its anti-inflammatory properties. Trends in GI symptoms, LAD, number of comorbidities, albeit not statistically significant, seem to be important. Due to small sample size, this study was underpowered to fully assess the effect of these factors. Thus this study should be considered exploratory.

Disclosures. All authors: No reported disclosures.

567. Assessing Residents' Perception of Their Ability to Manage Chronic Musculoskeletal Pain in HIV-Infected Patients

Brandon Twardy, MD, PhD¹; Lea Monday, MD, PharmD¹; Shahram Maroof, MD¹; Nichole Chakur, DPT²; Jarrett Weinberger, MD¹ and Jennifer Veltman, MD³; ¹Internal Medicine, Wayne State University School of Medicine and the Detroit Medical Center, Detroit, Michigan, ²University of Michigan Flint Physical Therapy Program, Flint, Michigan, ³Division of Infectious Diseases, Wayne State University School of Medicine, Detroit, Michigan

Session: 63. HIV Clinical Care and Outcomes
Thursday, October 5, 2017: 12:30 PM

Background. Chronic pain in HIV infected patients is common in the ambulatory setting, the majority of which is musculoskeletal (MSK). Addressing patient's pain is essential but physicians often fail to adequately manage MSK pain. Additionally, HIV patients with chronic non-cancer pain (CNCP) have a 2-fold increase in the risk of opioid misuse compared with the general population. We sought to determine the extent of pain complaints and opioid prescriptions in our HIV clinic as well as assess the comfort and ability of our residents to develop a comprehensive pain management plan.

Methods. We performed a chart review of all patients seen by our Internal Medicine (IM) residents in the HIV primary care in Detroit, MI from 01/2017-05/2017

and collected demographic and pain-related data. We also surveyed IM residents assigned to HIV primary care clinic on their knowledge and comfort developing management plans for CNCP. IRB waiver was obtained.

Results. A total of 249 HIV infected patients were seen from January 2017 to May 2017. Forty-one of 249 (16%) of patients were identified as having CNCP and of these patients, all were treated with opioids. MSK symptoms encompassed 28/41 (68%) of the total complaints. This included back pain ($n = 20$), lower extremity pain ($n = 10$), and upper extremity pain ($n = 2$). Only 5/41 (17%) patients were prescribed physical therapy for their pain complaints. Fifteen of 20 (75%) of IM residents responded to a survey on their comfort and knowledge in treating CNCP. None of the 15 (0%) felt completely comfortable developing a plan for CNCP, 2/15 (13%) felt their examination skills were adequate in assessing MSK symptoms in patients with CNCP. 12/15 (80%) felt working in collaboration with a physical therapist (PT) would be beneficial in developing effective treatment plans and 10/15 (67%) thought working in collaboration with a PT would help further develop their examination skills.

Conclusion. A survey of our IM residents has found gaps in both knowledge and comfort in CNCP pain management and high levels of opioid prescriptions in our HIV primary care clinic. Here we provide evidence that IM residents require additional training in treating CNCP in HIV patients and are interested in multidisciplinary approaches to development of non-pharmacologic treatment plans for HIV infected patients with CNCP.

Disclosures. All authors: No reported disclosures.

568. Systematic Review of Interventions for Depression for People Living with HIV in Africa

Sarah Lofgren, MD¹; Noeline Nakasujja, MMed, PhD² and David Boulware, MD, MPH³; ¹Department of Medicine, Division of Infectious Diseases and International Medicine, University of Minnesota, Minneapolis, Minnesota; ²Infectious Disease Institute, Makerere University, Kampala, Uganda, ³Makerere University College of Health Sciences, Kampala, Uganda, ⁴Division of Infectious Diseases and International Medicine, Department of Medicine, University of Minnesota, Minneapolis, Minnesota; Center for Infectious Diseases & Microbiology Translational Research, University of Minnesota, Minneapolis, Minnesota

Session: 63. HIV Clinical Care and Outcomes
Thursday, October 5, 2017: 12:30 PM

Background. Interventions for depression among those with HIV/AIDS in Africa are being evaluated in increasing numbers. However, feasibility, acceptability, and effectiveness have yet to be reviewed. We aimed to evaluate depression interventions performed in Africa for HIV infected adults.

Methods. Using key terms: depression, Africa, and HIV, we searched MEDLINE to identify depression interventions for adults with HIV in Africa. Women in the perinatal period were excluded. Data were extracted and the weighted relative change in depression scores for interventions and net effect over controls calculated.

Results. Data were obtained from 18 articles ($n = 1956$ HIV-infected participants). Of those, 1358 received interventions and 558 were controls. Six of seven studies evaluating feasibility were positive vs. seven positive studies evaluating acceptability. Three studies investigated the use of psychotherapy (73% intervention decrease, 39% net decrease). Four studies investigated task-shifting of psychotherapy (47% intervention decrease, 34% net decrease). Three studies investigated antidepressants (79% intervention decrease, 39% net decrease). Three studies investigated task-shifting of antidepressant treatment (82% intervention decrease, 65% net decrease). An exercise intervention was evaluated (66% intervention decrease, 49% net decrease). One randomized trial investigated minocycline with insignificant results. Finally, three studies investigated other psychosocial interventions (44% intervention decrease, 21% net decrease).

Conclusion. Evaluation of 18 articles showed multiple interventions had high feasibility and acceptability for depression care in people with depression and HIV in Africa. Larger randomized, controlled trials are needed to prove efficacy in this population as well as implementation trials to evaluate how best to improve depression care in resource-poor settings.

Figure 1. Search Strategy for Depression Review of those with HIV in Africa.

