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These are articles that pertain to the domain of HIV and Aging. Most studies done outside the USA are not included unless pertinent

PURPOSE: In the United States, 21 years is a critical age of legal and social transition, with changes in social programs such as public insurance coverage. Human immunodeficiency virus (HIV)-infected youth have lower adherence to care and medications and may be at risk of loss to follow-up (LTFU) at this benchmark age. We evaluated LTFU after the 22nd birthday for HIV-infected youth engaged in care. LTFU was defined as having no primary HIV visits in the year after the 22nd birthday. METHODS: All HIV-infected 21-year-olds engaged in care (2002-2011) at the HIV Research Network clinics were included. We assessed the proportion LTFU and used multivariable logistic regression to evaluate demographic and clinical characteristics associated with LTFU after the 22nd birthday. We compared LTFU at other age transitions during the adolescent/young adult years. RESULTS: Six hundred forty-seven 21-year-olds were engaged in care; 91 (19.8%) were LTFU in the year after turning 22 years. Receiving care at an adult versus pediatric HIV clinic (adjusted odds ratio [AOR], 2.91; 95% confidence interval [CI], 1.42-5.93), having fewer than four primary HIV visits/year (AOR, 2.72; 95% CI, 1.67-4.42), and antiretroviral therapy prescription (AOR,.50; 95% CI,.41-.60) were independently associated with LTFU. LTFU was prevalent at each age transition, with factors associated with LTFU similar to that identified for 21-year-olds. CONCLUSIONS: Although 19.8% of 21-year-olds at the HIV Research Network sites were LTFU after their 22nd birthday, significant proportions of youth of all ages were LTFU. Fewer than four primary HIV care visits/year, receiving care at adult clinics and not prescribed antiretroviral therapy, were associated with LTFU and may inform targeted interventions to reduce LTFU for these vulnerable patients.


OBJECTIVE: To determine the impact of self-reported marijuana use on the components of successful aging of human immunodeficiency virus-infected persons. METHODS:: Cross-sectional study of 45- to 65-year-old HIV-infected subjects on anti-retroviral therapy >6 months with undetectable HIV-1 viral load. Successful aging was defined as absence of disease; adequate physical function; high Quality of Life (QOL) and social engagement. Clinical characteristics, physical function assessments, and QOL from short-form 36 (SF-36) were compared between groups defined by self-reported Recent Marijuana Use (RMU), adjusted for tobacco use, CD4+ T-cell count and time since HIV diagnosis, using logistic or linear regression for binary or continuous measures. RESULTS:: 93 of 359 total subjects (26%) reported RMU. Demographically, patients reporting RMU had been diagnosed with HIV less recently (14 [13-16] vs 11 [10-12] years), reported smoking (48% vs 25%) and lower income (92% vs 80%) with greater prevalence than non-RMU patients; other demographics and clinical characteristics (age, CD4+ T-cell count) were similar. Gender, race/ethnicity, physical outcomes, physical function and disease burden were not significantly different. Patients reporting RMU demonstrated lower mental QOL and increased odds of low social engagement and underemployment compared to non-users. CONCLUSIONS:: The negative association between RMU and mental or social QOL should be considered when assessing the success with which HIV patients reporting RMU are aging.


BACKGROUND: Although it has been shown that human immunodeficiency virus (HIV)-infected adults are at greater risk for aging-associated events, it remains unclear as to whether these events happen at similar, or younger ages, in HIV-infected compared with uninfected adults. The objective of this study was to compare the median age at, and risk of, incident diagnosis of 3 age-associated diseases in HIV-infected and demographically similar uninfected adults. METHODS: The study was nested in the clinical prospective Veterans Aging Cohort Study of HIV-infected and demographically matched uninfected veterans, from 1 April 2003 to 31 December 2010. The outcomes were validated diagnoses of
myocardial infarction (MI), end-stage renal disease (ESRD), and non-AIDS-defining cancer (NADC). Differences in mean age at, and risk of, diagnosis by HIV status were estimated using multivariate linear regression models and Cox proportional hazards models, respectively. RESULTS: A total of 98 687 (31% HIV-infected and 69% uninfected) adults contributed >450 000 person-years and 689 MI, 1135 ESRD, and 4179 NADC incident diagnoses. Mean age at MI (adjusted mean difference, -0.11; 95% confidence interval [CI], -0.59 to -0.37 years) and NADC (adjusted mean difference, -0.10 [95% CI, -0.30 to -0.10] years) did not differ by HIV status. HIV-infected adults were diagnosed with ESRD at an average age of 5.5 months younger than uninfected adults (adjusted mean difference, -0.46 [95% CI, -0.86 to -0.07] years). HIV-infected adults had a greater risk of all 3 outcomes compared with uninfected adults after accounting for important confounders. CONCLUSIONS: HIV-infected adults had a higher risk of these age-associated events, but they occurred at similar ages than those without HIV.


OBJECTIVES:: HIV-associated brain injury persists despite antiretroviral therapy (cART), but contributing factors remain poorly understood. We postulated that inflammation-associated biomarkers will be associated with cerebral injury on proton magnetic resonance spectroscopy (MRS) in chronically HIV-infected subjects. METHODS: Five biomarkers were measured in 197 HIV-infected subjects: soluble CD14, MCP-1, IP-10, MIP-1beta, and fractalkine. Levels of acetyl aspartate (NAA), Choline (Cho), Myoinositol (MI), Glutamate+Glutamine (Glx), and Creatine (Cr) were acquired in the midfrontal cortex (MFC), frontal white matter (FWM), and basal ganglia (BG). Predictive models were built via linear regression and the best models were chosen using the Akaike Information Criterion. RESULTS:: Increases in plasma or CSF MCP-1 were associated with lower NAA/Cr in the MFC and BG while metabolite changes in the FWM for NAA/Cr, Glx/Cr and Cho/Cr were explained almost exclusively by a single factor, sCD14. Plasma and CSF levels of this factor were also significantly associated with Glx/Cr in MFC and BG. Higher CSF FKN was associated with higher NAA/Cr in BG. Best predictors for higher Cho/Cr in BG and MFC were CSF sCD14 and CSF MIP-1beta. Plasma and CSF IP-10 were only associated with Cho/Cr in MFC. Of the three models which simultaneously accounted for both plasma and CSF, there were more associations between CSF biomarkers and MRS metabolites. CONCLUSIONS:: Markers of inflammation and immune activation, in particular MCP-1 and sCD14, predominantly reflecting CNS sources, contribute to the persistence of brain injury in a metabolite and region dependent manner in chronically HIV-infected patients on stable cART.


BACKGROUND:: Chronic inflammation and immune activation occur in both HIV infection and normal ageing and are associated with inflammatory disease. However, the degree to which HIV influences age-related innate immune changes, and the biomarkers which best reflect them, remains unclear. METHODS AND RESULTS:: We measured established innate immune ageing biomarkers in 309 individuals including 88 viremically-suppressed (VS) and 52 viremic (viral load \(</=50\) copies/ml respectively) HIV+ individuals. Levels of soluble (ie. CXCL10, soluble CD163, neopterin) and cellular (ie. proportions of inflammatory CD16+ monocytes) biomarkers of monocyte activation were increased in HIV+ individuals and were only partially ameliorated by viral suppression. Viremic and VS HIV+ individuals show levels of age-related monocyte activation biomarkers that are similar to uninfected controls aged 12 and 4 years older respectively. Viremic HIV infection was associated with an accelerated rate of change of some monocyte activation markers (eg. neopterin) with age, whilst in VS individuals, subsequent age-related changes occurred at a similar rate as in controls, albeit at a higher absolute level. We further identified CXCL10 as a robust soluble biomarker of monocyte activation, highlighting the potential utility of this chemokine as a prognostic marker. IMPLICATIONS:: These findings may partially explain the increased prevalence of inflammatory, age-related diseases in HIV+ individuals and
potentially indicate the pathological mechanisms underlying these diseases which persist despite viral suppression.


BackgroundBecause of the increased life-expectancy of persons with HIV, the need for age-appropriate colorectal cancer screening among these patients will increase. We examined rates of colorectal cancer screening among HIV-infected men aged 50 to 65 years.MethodsWe used Ontario inverted question marks administrative databases to identify all men between the ages of 50 and 65 years who were alive on April 1, 2007, and identified HIV-infected men using a validated case-finding algorithm. We excluded men with a history of colorectal cancer, anal cancer, inflammatory bowel disease and any colorectal investigation in the preceding five-years, and used multivariable regression to compare rates of colorectal cancer screening between men with and without HIV during five years of follow-up.

ResultsWe identified 743,801 men between the ages of 50 and 65 years, of whom 1,432 (0.19%) were HIV-infected. The proportions of men with and without HIV who underwent any screening during the 5-year follow up period were 49.1% (95% CI 46.5% to 51.7%) and 41.4% (95% CI 41.3% to 41.5%), respectively. Compared with HIV-negative men, men with HIV had lower rates of fecal occult blood testing [adjusted rate ratio (aRR) 0.74; 95% confidence interval (CI) 0.63 to 0.87] and barium-enema radiography (aRR 0.66; 95% CI 0.39 to 1.12), but higher rates of colonoscopy (aRR 1.24; 95% CI 1.13 to 1.37), flexible sigmoidoscopy (aRR 1.72; 95% CI 1.28 to 2.30) and rigid sigmoidoscopy (aRR 2.98; 95% CI 2.26 to 3.93). Conclusion As with the general population of men aged 50 to 65 years, less than half of the population of men with HIV received colorectal cancer screening. Strategies are required to improve uptake of this intervention.


Human Immunodeficiency Virus- (HIV-) infected persons have a higher risk for acute myocardial infarction (AMI) than HIV-uninfected persons. Earlier studies suggest that HIV viral load, CD4+ T-cell count, and antiretroviral therapy are associated with cardiovascular disease (CVD) risk. Whether CD8+ T-cell count is associated with CVD risk is not clear. We investigated the association between CD8+ T-cell count and incident AMI in a cohort of 73,398 people (of which 97.3% were men) enrolled in the U.S. Veterans Aging Cohort Study-Virtual Cohort (VACS-VC). Compared to uninfected people, HIV-infected people with high baseline CD8+ T-cell counts (>1065 cells/mm3) had increased AMI risk (adjusted HR=1.82, P<0.001, 95% CI: 1.46 to 2.28). There was evidence that the effect of CD8+ T-cell tertiles on AMI risk differed by CD4+ T-cell level: compared to uninfected people, HIV-infected people with CD4+ T-cell counts >/=200 cells/mm3 had increased AMI risk with high CD8+ T-cell count, while those with CD4+ T-cell counts <200 cells/mm3 had increased AMI risk with low CD8+ T-cell count. CD8+ T-cell counts may add additional AMI risk stratification information beyond that provided by CD4+ T-cell counts alone.


OBJECTIVES: Both HIV infection and antiretroviral therapy (ART) may increase cardiovascular disease (CVD) risk. Assessments of vascular function and structure can be used to study the pathogenesis and progression of CVD, including the effects of ART and other interventions. The objective of this report is to understand methods to assess vascular (dys)function and report our experience in the Arterial Elasticity Substudy in the Strategic Timing of AntiRetroviral Treatment (START) trial. METHODS: We review literature and analyze baseline data from the Arterial Elasticity Substudy, which estimated vascular (dys)function through analysis of the diastolic blood pressure (BP) waveform. Linear regression was used to study cross-sectional associations between baseline clinical factors and small or large arterial elasticity. RESULTS: Arterial elasticity measurement was chosen for its improved measurement
reproducibility over other methodologies and the potential of small arterial elasticity to predict clinical risk. Analysis of baseline data demonstrates that small artery elasticity is impaired (lower) with older age and differs by race and between geographical regions. No HIV-specific factors studied remained significantly associated with arterial elasticity in multivariate models. CONCLUSIONS: Longitudinal analyses in this substudy will provide essential randomized data with which to study the effects of early ART initiation on the progression of vascular disease among a diverse global population. When combined with future biomarker analyses and clinical outcomes in START, these findings will expand our understanding of the pathogenesis of HIV-related CVD.


While HIV has become a largely chronic disease, age-associated comorbidities are prevalent in people living with HIV (PLWH). Therefore, PLWH are appropriate for advance care planning (ACP) and advance directives (ADs) completion. We sought to characterize AD completion among outpatient PLWH. We conducted a retrospective chart review of PLWH who receive their routine care at the University of Wisconsin HIV clinic. Data were extracted from the electronic health record. Variables were entered into a stepwise multivariate logistic regression model to assess which factors were independently associated with AD completion. Five hundred and eighty eight charts were reviewed. Eighty-one percent of subjects were male and 72% were white; mean age was 46.8 years. ADs were completed by 134 subjects and 6.7% of those were completed at the HIV clinic. In the final multivariate model, those who had completed an AD were more likely to be older than age 45; ever been diagnosed with AIDS; have cardiovascular disease, neurologic disorder, chronic kidney disease, or malignancy. In this study, a small percentage of patients had documented ADs, with only a small proportion completed in the HIV clinic. The HIV clinic is an underutilized resource to offer ACP. Interventions are needed to provide the necessary ACP resources for PLWH.


BACKGROUND: Support groups for people living with HIV are integrated into HIV care and treatment programs as a modality for increasing patient literacy and as an intervention to address the psychosocial needs of patients. However, the impact of support groups on key health outcomes has not been fully determined. METHODS: We searched electronic databases from January 1995 through May 2014 and reviewed relevant literature on the impact of support groups on mortality, morbidity, retention in HIV care, quality of life (QOL), and ongoing HIV transmission, as well as their cost-effectiveness. RESULTS: Of 1809 citations identified, 20 met the inclusion criteria. One reported on mortality, 7 on morbidity, 5 on retention in care, 7 on QOL, and 7 on ongoing HIV transmission. Eighteen (90%) of the articles reported largely positive results on the impact of support group interventions on key outcomes. Support groups were associated with reduced mortality and morbidity, increased retention in care, and improved QOL. Because of study limitations, the overall quality of evidence was rated as fair for mortality, morbidity, retention in care, and QOL, and poor for HIV transmission. CONCLUSIONS: Implementing support groups as an intervention is expected to have a high impact on morbidity and retention in care and a moderate impact on mortality and QOL of people living with HIV. Support groups improve disclosure with potential prevention benefits but the impact on ongoing transmission is uncertain. It is unclear whether this intervention is cost-effective given the paucity of studies in this area.


The 18th WHO Global Tuberculosis Annual Report indicates that there were an estimated 8.6 million incident cases of tuberculosis (TB) in 2012, which included 2.9 million women and 530,000 children. TB caused 1.3 million deaths including 320,000 human immunodeficiency virus (HIV)-infected people; three-quarters of deaths occurred in Africa and Southeast Asia. With one-third of the world's
population latently infected with Mycobacterium tuberculosis (Mtb), active TB disease is primarily associated with a break down in immune surveillance. This explains the strong link between active TB disease and other communicable diseases (CDs) or noncommunicable diseases (NCDs) that exert a toll on the immune system. Comorbid NCD risk factors include diabetes, smoking, malnutrition, and chronic lung disease, all of which have increased relentlessly over the past decade in developing countries. The huge overlap between killer infections such as TB, HIV, malaria, and severe viral infections with NCDs, results in a "double burden of disease" in developing countries. The current focus on vertical disease programs fails to recognize comorbidities or to encourage joint management approaches. This review highlights major disease overlaps and discusses the rationale for better integration of tuberculosis care with services for NCDs and other infectious diseases to enhance the overall efficiency of the public health responses.


The epsilon4 allele of the apolipoprotein E (ApoE) gene may have important interactions with physical health and cognitive function among individuals with HIV disease. The purpose of this study is to examine the relationships between epsilon4, HIV disease, age, neuropsychological impairment, and death in a large, well-characterized study sample. A total of 2846 men participating in the Multicenter AIDS Cohort Study had ApoE genotyping and neuropsychological test data available for analysis. We found a significant association between HIV infection and time to death (from any cause), as well as older age, race, and education. But, ApoE status was not significantly associated with time to death. Similarly, we found a significant association between HIV infection and time to incident cognitive impairment, as well as age, education, and HIV serostatus; Apoepsilon4 status was not related to incident cognitive impairment. There were no significant interactions between ApoE, HIV infection, and age on cognitive impairment. These data replicate and strengthen prior findings of the lack of association between ApoE epsilon4 and cognitive outcomes in HIV disease. We conclude that within the specific constraints of an exclusively male study in which the majority of participants were less than 65 years of age (range 22-87 years), it appears reasonable to conclude that the epsilon4 allele is not significantly interacting with HIV serostatus.


Improving quality of life (QOL) for HIV-infected individuals is an important objective of HIV care, given the considerable physical and emotional burden associated with living with HIV. Although worse QOL has been associated with depression, no research has quantified the potential of improvement in depression to prospectively improve QOL among HIV-infected adults. We analyzed data from 115 HIV-infected adults with depression enrolled in a randomized controlled trial to evaluate the effectiveness of improved depression care on antiretroviral drug adherence. Improvement in depression, the exposure of interest, was defined as the relative change in depression at six months compared to baseline and categorized as full response (>50% improvement), partial response (25-49% improvement), and no response (<25% improvement). Multivariable linear regression was used to investigate the relationship between improvement in depression and four continuous measures of QOL at six months: physical QOL, mental QOL, HIV symptoms, and fatigue intensity. In multivariable analyses, physical QOL was higher among partial responders (mean difference [MD] = 2.51, 95% CI: -1.51, 6.54) and full responders (MD = 3.68, 95% CI: -0.36, 7.72) compared to individuals who did not respond. Mental QOL was an average of 4.01 points higher (95% CI: -1.01, 9.03) among partial responders and 14.34 points higher (95% CI: 9.42, 19.25) among full responders. HIV symptoms were lower for partial responders (MD = -0.69; 95% CI: -1.69, 0.30) and full responders (MD = -1.51; 95% CI: -2.50, -0.53). Fatigue intensity was also lower for partial responders (MD = -0.94; 95% CI: -1.94, 0.07) and full responders (MD = -3.00; 95% CI: -3.98, -2.02). Among HIV-infected adults with depression, improving access to high-quality depression treatment may also improve important QOL outcomes.

BACKGROUND: Successful combined antiretroviral therapy (cART) does not always result in complete CD4 T-cell recovery despite the effective control of HIV replication. Because telomere dysregulation can lead to an abnormal cell proliferation, we hypothesized that the lack of CD4 recovery may be related to telomere defects; We thus evaluated the association between telomere length (TL) and CD4 T-cell recovery 48 weeks after cART initiation in virologically suppressed patients, and its possible relationship to oxidative stress (OS) and nitrosative stress (NOx) markers. METHODS: We studied HIV-infected patients on stable cART who achieved a viral load <50 copies per milliliter after 48 weeks of their first cART. Leukocyte TL was measured and categorized into tertiles. We calculated mean increases in CD4 T-cell at 48 weeks from cART initiation and used multivariate linear regression models to estimate differences in mean increases according to tertiles of TL. RESULTS: One hundred thirty-two patients, 86% male, 81% <50 years at cART initiation were studied. Mean increases in CD4 were greater in patients with long TL than in those with medium and short TLs (P = 0.007). After adjustment for sex, age, CD4 T-cell counts, viral load, and hepatitis C infection at cART initiation, differences in mean CD4 T-cell count increases according to TL remained statistically significant (P = 0.02). Additional adjustment for NOx and OS did not change the results. CONCLUSION: A lower immunological response despite a successful virological response is associated with a shorter TL. The effect is not related to NOx or OS.


BACKGROUND: Elevated interleukin-6 (IL-6) levels have been linked to cardiovascular disease, cancer and death. Treated HIV+ persons have higher IL-6 levels, but few data on factors associated with circulating IL-6 exist. METHODS: Participants in 3 trials with IL-6 measured at baseline were included (N=9864). Factors associated with IL-6 were identified by linear regression. Demographics and HIV variables (nadir/entry CD4, HIV-RNA, ART regimens) were investigated in all 3 trials. In SMART, CD4:CD8 ratio, smoking, comorbidities, serum lipids, renal function (eGFR) and education were assessed. RESULTS: Demographics associated with higher IL-6 were older age and lower education, whereas black race was associated with lower IL-6. Higher HIV-RNA was associated with higher IL-6 while higher nadir CD4 was associated with lower IL-6. Compared to efavirenz, protease inhibitors (PI) were associated with higher IL-6 whereas nevirapine was associated with lower IL-6. Smoking and all comorbidities were related to higher IL-6. IL-6 increased with decreasing eGFR and decreasing serum lipids. CONCLUSIONS: Higher IL-6 was associated with older age, non-black race, higher BMI, lower serum lipids, HIV replication, low nadir CD4, PI use, comorbidities and decreased eGFR. Multiple factors affect inflammation in HIV and should be considered in studies of IL-6 as a biomarker of clinical outcomes.


The present study examined whether emotion dysregulation moderated the relations between depressive symptoms and HIV symptoms, HIV medication adherence due to medication side effects, avoidant coping, and distress tolerance among people living with HIV/AIDS (PLHA). Participants included 115 PLHA (16.8% female; Mage = 49.70, SD = 8.57). Results indicated that there was a significant interaction between depressive symptoms and emotion dysregulation in relation to HIV symptoms, HIV medication adherence due to medication side effects, avoidant coping, and distress tolerance. The form of the interaction indicated that PLHA experiencing higher depressive symptoms and higher levels of emotion dysregulation reported the highest levels of HIV symptoms and lowest levels of distress tolerance. Additionally, results indicated that at lower levels of depressive symptoms, very high levels of emotion dysregulation predicted higher rates of medication nonadherence, whereas at higher levels of depressive symptoms, very high levels of emotion dysregulation predicted the lowest rates of medication nonadherence. Moreover, those experiencing lower levels of depressive symptoms and
higher levels of emotion dysregulation reported the greatest rates of avoidant coping. In total, the present results suggest a complex interplay between emotion dysregulation and depressive symptoms with regard to HIV symptoms, medication nonadherence, and self-regulatory processes (e.g., avoidant coping, distress tolerance) among PLHA.


Demands on HIV services are increasing as a consequence of the increased life-expectancy of HIV patients in the highly active antiretroviral therapy era. Understanding the factors that influence utilization of ambulatory HIV services is useful for planning service provision. This study reviewed factors associated with utilization of hospital based HIV out-patient services. Studies reporting person-based utilization rates of HIV-specific outpatient services broken down by patient or healthcare characteristics were eligible for inclusion. The Andersen Behavioral Model was used to organize the information extracted into pre-disposing, enabling and need components. Ten studies were included in the final review. Older age, private insurance, urban residence, lower CD4 counts, a diagnosis of AIDS, or anti-retroviral treatment were associated with higher utilization rates. The results of this review are consistent with existing knowledge regarding HIV patients' use of health services. Little information was identified on the influence of health service characteristics on utilization of out-patient services.


Optimal retention in HIV care postpartum is necessary to benefit the health and wellbeing of mothers and their infants. However, postpartum retention in HIV care among low-income women is suboptimal, particularly in the Southern United States. A mixed-methods study was conducted to identify factors associated with postpartum retention in care among HIV-infected women. Participants (n=35) were recruited during pregnancy at two county clinics and completed self-report demographic and psychosocial surveys. Twenty-two women who returned for a postpartum appointment completed a semi-structured interview about lifestyle factors and retention in care. Of the participants enrolled at baseline, 71.4% completed a follow-up with an obstetrician (OB), while 57.1% completed a follow-up with a primary care physician (PCP). High CD4 count at delivery, low viral load at baseline, low levels of depression, high interpersonal social support, and fewer other children were significantly associated with completion of postpartum follow-up. Barriers and facilitators to retention identified during qualitative interviews included competing responsibilities for time, lack of social support outside of immediate family members, limited transportation access, experiences of institutionalized stigma, knowledge about the benefits of adherence, and strong relationships with healthcare providers. OB and PCP follow-up postpartum was suboptimal in this sample. Findings underscore the importance of addressing depressive symptoms, social support, viral suppression, competing responsibilities for time, institutionalized stigma, and transportation issues in order to reduce the barriers that inhibit women from seeking postpartum HIV care.


HIV-related stigma has been linked to avoidance of health care services and suboptimal adherence to antiretroviral therapy (ART). However, less is known about concerns of stigma related specifically to the taking of ART in uptake of treatment. This study examines experiences of HIV treatment-related stigma and assesses if these experiences are associated with ART uptake, independent of general HIV-related stigma. People living with HIV (PLHIV; n = 697) were targeted to complete an online questionnaire measuring perceived HIV- and treatment-related stigma, social support, self-esteem, resilience, psychological distress, health satisfaction and quality of life. Findings suggest that experiences of general and treatment-related stigma were common, and that participants appear to experience greater stigma related to taking HIV treatment than general stigma associated with HIV. Neither general
Background Many veterans engaged in care with the Veterans Administration (VA) health system are also enrolled in Medicare and/or Medicaid and may receive care both inside and outside the VA. Use of dual health systems has been associated with worse outcomes. Veterans with HIV may have different rates of Medicare and Medicaid enrollment and may be at greater risk of poor outcomes related to non-VA use. This study compares the frequency and factors associated with Medicare and/or Medicaid enrollment and non-VA use in an HIV-infected and uninfected population of veterans.

Methods We used data from the VA and Center for Medicare & Medicaid Services from 2004 and 2005 to determine the frequency of Medicare and/or Medicaid enrollment among a cohort of HIV-infected and uninfected veterans engaged in VA care. We then restricted the cohort to veterans enrolled in fee-for-service (FFS) Medicare and/or Medicaid with at least one hospitalization and identified characteristics associated with non-VA hospital admissions.

Results HIV-infected veterans had higher rates of Medicare and/or Medicaid enrollment than uninfected veterans (38% vs. 33%, p inverted question mark< inverted question mark0.01), though the opposite was true when our sample was limited to veterans 65 years and older (53% vs. 70%, p inverted question mark< inverted question mark0.01). Among veterans enrolled in the VA and FFS Medicare and/or Medicaid, veterans with HIV had greater illness severity and more frequent hospitalizations, but were less likely to be hospitalized outside the VA (48% vs. 54%, p inverted question mark< inverted question mark0.01). HIV infection was associated with lower odds of outside hospitalization (OR inverted question mark= inverted question mark0.76 [95% CI: 0.68, 0.85]).

Conclusions Veterans with HIV have higher rates of Medicare and/or Medicaid enrollment, but...
lower odds of non-VA hospitalization. The VA integrated model of HIV care may discourage outside use among HIV-infected veterans.


Social networking technologies have emerged as potential platforms to reach HIV(+) MSM in HIV interventions. This study sought to compare use of online social networking sites (SNSs) and sexual risk behaviors between HIV(+) and HIV(-) individuals among a sample of predominately African American and Latino SNS-using MSM. A total of 112 MSM Facebook users were recruited online and offline and completed an online survey. We performed regression models to assess the association between HIV status, SNS use, and sexual risk behaviors. After adjusting for age, race, and employment status, being HIV positive was significantly associated with a greater number of sexual partners (ARR = 2.84, p = 0.0017) and lower comfort levels of discussing HIV/STI status on SNSs (AOR: 0.23, p = 0.011). Findings suggest that HIV status is associated with sexual risk behaviors and SNS use among SNS-using MSM. We discuss the implications for online HIV prevention.


A 52-year-old man with HIV was referred for an F-FDG PET/CT scan for the cause of kidney injury. FDG PET/CT scan revealed increased renal cortical FDG activity, which can be seen in HIV nephropathy or acute interstitial nephritis. Diffuse increased FDG uptake was demonstrated within the right testicle and epididymis, consistent with the patient’s known right epididymo-orchitis, as diagnosed on ultrasound 1 week before admission. Multiple enlarged lymph nodes with increased FDG activity were also found within the right inguinal and external iliac nodal chains, which were presumed to be reactive. The patient was treated with ciprofloxacin with symptomatic improvement.


PURPOSE: The human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome epidemic in the United States is evolving because of factors such as aging and geographic diffusion. Provider shortages are also driving the restructuring of HIV care delivery away from specialized settings, and family medicine providers may play a larger role in the future. We attempted to compare the effectiveness of HIV treatment delivered at community versus hospital care settings. METHODS: The outcome of interest was sustained virologic suppression defined as 2 consecutive HIV-1 RNA measurements ≤400 copies/mL within 1 year after antiretroviral initiation. We used data from the multistate HIV Research Network cohort to compare sustained virologic suppression outcomes among 15,047 HIV-infected adults followed from 2000 to 2008 at 5 community- and 8 academic hospital-based ambulatory care sites. Community-based sites were mostly staffed by family medicine and general internal medicine physicians with HIV expertise, whereas hospital sites were primarily staffed by infectious disease subspecialists. Multivariate mixed effects logistic regression controlling for potential confounding variables was applied to account for clustering effects of study sites. RESULTS: In an unadjusted analysis the rate of sustained virologic suppression was significantly higher among subjects treated in community-based care settings: 1,646 of 2,314 (71.1%) versus 8,416 of 12,733 (66.1%) (P < .01). In the adjusted multivariate model with potential confounding variables, the rate was higher, although not statistically significant, in the community-based settings (adjusted odds ratio, 1.26; 95% confidence interval, 0.73-2.16). CONCLUSION: Antiretroviral therapy can be delivered effectively through community-based treatment settings. This finding is potentially important for new program development, shifting HIV care into community-based settings as the landscape of accountable care, health reform, and HIV funding and resources evolves.

Summary The life span of persons with HIV has been greatly extended over the past 30 years due to novel therapies. In the developed world and urban settings, this results in a lifespan rivaling the lifespan of a person without HIV. A retrospective study was conducted on 459 patients of an urban, academic medical center who died between 2005 and 2013 in a medium-sized US city. Using the established Cause of Death Project (CoDe) protocol, we measured multiple factors including comorbidities, risk behaviours, contributing and underlying causes of death. This study is one of the few US-based studies using this validated protocol. Among the deaths, 25.9% were sudden and 15.2% were unexpected. Almost one-fifth were related to AIDS-related infections; 47.5% related to non-AIDS causes; with the remainder unknown. Statistically significant increases in CD4 counts and decreasing viral loads were observed over the study period. There were no statistically significant differences observed by HIV risk behaviour, race, gender, age at death, or on antiretrovirals at death. In support of the existing literature, improved HIV management appears to reduce the AIDS-related attributable death among patients observed in this study.


BACKGROUND: frailty is a state of vulnerability to adverse outcomes. Routine identification of frailty is recommended in international guidance. This systematic review investigates the diagnostic test accuracy (DTA) of simple instruments for identifying frailty in community-dwelling older people.

METHODS: the review methodology followed Cochrane procedures. Databases were searched from January 1990 to October 2013. Prospective studies assessing the DTA of simple instruments for identifying frailty in community-dwelling older people (aged >/=65 years) as index tests against a reference standard phenotype model, cumulative deficit frailty index or comprehensive geriatric assessment were eligible for inclusion. Sensitivity, specificity, positive predictive value, negative predictive value and likelihood ratios were calculated for index tests. Risk of bias was assessed using the QUADAS-2 checklist.

RESULTS: three studies involving 3,261 participants were included. Median frailty prevalence was 10.5%. Seven index tests were assessed: gait speed, timed-up-and-go test, PRISMA 7 questionnaire, self-reported health, general practitioner clinical assessment, polypharmacy and Groningen Frailty Index. For a gait speed of <0.8 m/s, the sensitivity = 0.99 and specificity = 0.64. For the PRISMA 7, the sensitivity = 0.83 and specificity = 0.83. For the timed get-up-and-go test of 10 s, the sensitivity = 0.93 and specificity = 0.62. DTA was notably lower for all other index tests. All three studies were judged at unclear risk of bias.

DISCUSSION: slow gait speed, PRISMA 7 and the timed get-up-and-go test have high sensitivity for identifying frailty. However, limited specificity implies many false-positive results which means that these instruments cannot be used as accurate single tests to identify frailty.


OBJECTIVES: We investigated the possibility that men who have sex with men (MSM) and women who have sex with women (WSW) may be at higher risk for early mortality associated with suicide and other sexual orientation-associated health risks.

METHODS: We used data from the 1988-2002 General Social Surveys, with respondents followed up for mortality status as of December 31, 2008. The surveys included 17 886 persons aged 18 years or older, who reported at least 1 lifetime sexual partner. Of these, 853 reported any same-sex partners; 17 033 reported only different-sex partners. Using gender-stratified analyses, we compared these 2 groups for all-cause mortality and HIV-, suicide-, and breast cancer-related mortality.

RESULTS: The WSW evidenced greater risk for suicide mortality than presumptively heterosexual women, but there was no evidence of similar sexual orientation-associated risk among men. All-cause mortality did not appear to differ by sexual orientation among either women or men. HIV-
related deaths were not elevated among MSM or breast cancer deaths among WSW. CONCLUSIONS: The elevated suicide mortality risk observed among WSW partially confirms public health concerns that sexual minorities experience greater burden from suicide-related mortality.


BACKGROUND: Immigrant HIV-infected adults in industrialized countries show a poorer clinical and virologic outcome compared with native patients. We aimed to investigate potential differences in clinical, immunological, and virologic outcome in Dutch HIV-infected children born in the Netherlands (NL) versus born in Sub-Saharan Africa (SSA) in a national cohort analysis. METHODS: We included all HIV-infected children registered between 1996 and 2013. Descriptive statistics, mixed-effects models, and Cox proportional hazard models were used to investigate differences between groups. RESULTS: In total, 319 HIV-infected children were registered. The majority of these children were born in SSA (n = 148, 47%) or NL (n = 113, 36%) and most were black (n = 158, 61%). Children born in NL were diagnosed at a median age of 1.2 years and initiated combination antiretroviral therapy (cART) at a median age of 2.6 years, compared with 3.7 and 5.3 years, respectively, for children born in SSA (HIV diagnosis: P < 0.001; cART initiation: P < 0.001). Despite a lower initial CD4 T-cell Z-score in children born in SSA, their immunological reconstitution was similar to children from NL. Virologic suppression was achieved in the majority of all cART-treated children (NL: 96%, SSA: 94%). There was no difference in the occurrence or timing of virologic failure. CONCLUSIONS: Most immigrant HIV-infected children living in NL were born in SSA. Children born in SSA were diagnosed and initiated cART at an older age than children born in NL. Despite initial differences in CD4 T-cell counts and HIV viral load, the long-term immunological and virologic response to cART was similar in both groups.


Drug abuse is a major comorbidity of HIV infection and cognitive disorders are often more severe in the drug abusing HIV infected population. CD14+CD16+ monocytes, a mature subpopulation of peripheral blood monocytes, are key mediators of HIV neuropathogenesis. Infected CD14+CD16+ monocyte transmigration across the blood brain barrier mediates HIV entry into the brain and establishes a viral reservoir within the CNS. Despite successful antiretroviral therapy, continued influx of CD14+CD16+ monocytes, both infected and uninfected, contributes to chronic neuroinflammation and the development of HIV associated neurocognitive disorders (HAND). Drug abuse increases extracellular dopamine in the CNS. Once in the brain, CD14+CD16+ monocytes can be exposed to extracellular dopamine due to drug abuse. The direct effects of dopamine on CD14+CD16+ monocytes and their contribution to HIV neuropathogenesis are not known. In this study, we showed that CD14+CD16+ monocytes express mRNA for all five dopamine receptors by qRT-PCR and D1R, D5R and D4R surface protein by flow cytometry. Dopamine and the D1-like dopamine receptor agonist, SKF38393, increased CD14+CD16+ monocyte migration that was characterized as chemokinesis. To determine whether dopamine affected cell motility and adhesion, live cell imaging was used to monitor the accumulation of CD14+CD16+ monocytes on the surface of a tissue culture dish. Dopamine increased the number and the rate at which CD14+CD16+ monocytes in suspension settled to the dish surface. In a spreading assay, dopamine increased the area of CD14+CD16+ monocytes during the early stages of cell adhesion. In addition, adhesion assays showed that the overall total number of adherent CD14+CD16+ monocytes increased in the presence of dopamine. These data suggest that elevated extracellular dopamine in the CNS of HIV infected drug abusers contributes to HIV neuropathogenesis by increasing the accumulation of CD14+CD16+ monocytes in dopamine rich brain regions.
Hepatitis C virus (HCV) infection is one of the most frequent causes of comorbidity and mortality in the human immunodeficiency virus (HIV) population, and liver-related mortality is now the second highest cause of death in HIV-positive patients, so HCV infection should be countered with adequate antiviral therapy. In 2011 began the era of directly acting antivirals (DAAs) and the HCV NS3/4A protease inhibitors telaprevir and boceprevir were approved to treat HCV-genotype-1 infection, each one in combination with pegylated interferon alfa (Peg-IFN) + ribavirin (RBV). The addition of the first generation DAAs, strongly improved the efficacy of antiviral therapy in patients with HCV-genotype 1, both for the HCV-monoinfected and HIV/HCV coinfectected, and the poor response to Peg-IFN + RBV in HCV/HIV coinfection was enhanced. These treatments showed higher rates of sustained virological response than Peg-IFN + RBV but reduced tolerability and adherence due to the high pill burden and the several pharmacokinetic interactions between HCV NS3/4A protease inhibitors and antiretroviral drugs. Then in 2013 a new wave of DAAs arrived, characterized by high efficacy, good tolerability, a low pill burden and shortened treatment duration. The second and third generation DAAs also comprised IFN-free regimens, which in small recent trials on HIV-positive patients have shown comforting preliminary results in terms of efficacy, tolerability and adherence.


Herpes zoster, commonly referred to as shingles, is caused by the varicella zoster virus (VZV). VZV initially manifests as chickenpox, most commonly in childhood, can remain asymptomatically latent in nerve tissues for many years and often re-emerges as shingles. Although reactivation may be related to immune suppression, aging and female sex, most inter-individual variability in re-emergence risk has not been explained to date. We performed a genome-wide association analyses in 22,981 participants (2280 shingles cases) from the electronic Medical Records and Genomics Network. Using Cox survival and logistic regression, we identified a genomic region in the combined and European ancestry groups that has an age of onset effect reaching genome-wide significance (P>1.0 x 10(-8)). This region tags the non-coding gene HCP5 (HLA Complex P5) in the major histocompatibility complex. This gene is an endogenous retrovirus and likely influences viral activity through regulatory functions. Variant in this genetic region are known to be associated with delay in development of AIDS in people infected by HIV. Our study provides further suggestion that this region may have a critical role in viral suppression and could potentially harbor a clinically actionable variant for the shingles vaccine.


While highly active antiretroviral therapy has been successful in delaying progression into AIDS, late HIV diagnosis remains a major contributor to the mortality and morbidity of AIDS. An epidemiological study was conducted to evaluate the prevalence and factors of late diagnosis and the characteristics of those individuals with late diagnosis in Liuzhou city. Patients with late diagnosis were defined as either those who were diagnosed with AIDS at the time of HIV diagnosis or as those who developed AIDS no more than 1 year after HIV diagnosis. Of 899 participants, 72.6% had a late diagnosis. Common characteristics of those who experienced late diagnosis included older participants, those who were unexpectedly diagnosed while seeking other medical attention, participants who believed they could not acquire HIV from their regular heterosexual partners, those who never considered getting tested for HIV, and patients with unexplained weight loss, angular cheilitis, or prolonged fever prior to
HIV diagnosis. On the other hand, those participants who were diagnosed via testing at compulsory rehabilitation centers and those whose annual household income was greater than 30,000 Yuan were less likely to be diagnosed late. These results suggested that late HIV diagnosis is common in Liuzhou city, and it is essential to promote appropriate strategies to detect HIV infections earlier. Strategies that require HIV/AIDS patients to notify their spouse/sexual-partners about their HIV-positive results within one month and start provider-initiated HIV testing and counseling in medical facilities are beneficial to earlier HIV diagnosis. J. Med. Virol. (c) 2015 Wiley Periodicals, Inc.


PURPOSE: To explore primary care providers' HIV prevention practices for older adults. Primary care providers' perceptions and awareness were explored to understand factors that affect their provision of HIV prevention materials and HIV screening for older adults. DESIGN AND METHOD: Data were collected through 24 semistructured interviews with primary care providers (i.e., physicians, physician assistants, and nurse practitioners) who see patients older than 50 years. RESULTS: Results reveal facilitators and barriers of HIV prevention for older adults among primary care providers and understanding of providers' HIV prevention practices and behaviors. Individual, patient, institutional, and societal factors influenced HIV prevention practices among participants, for example, provider training and work experience, lack of time, discomfort in discussing HIV/AIDS with older adults, stigma, and ageism were contributing factors. Furthermore, factors specific to primary and secondary HIV prevention were identified, for instance, the presence of sexually transmitted infections influenced providers' secondary prevention practices. IMPLICATIONS: HIV disease, while preventable, is increasing among older adults. These findings inform future research and interventions aimed at increasing HIV prevention practices in primary care settings for patients older than 50.


PURPOSE: This study compared the Quality of Life (QOL) according to the presence of functional and psychosocial impact of oral disorders and evaluated the convergent validity between the dimensions of the WHOQOL and the OHIP-14 scores among people living with HIV. METHODS: This was a cross-sectional study with patients enrolled in reference centres of a midsize Brazilian city. Interviews were conducted when the participants arrived at the centres seeking services for medical appointments and collecting medicines. The OHIP-14 was used to evaluate the functional and psychosocial impact of oral disorders. QOL was assessed using the general issues and six domains of the WHOQOL-HIV BREF. The Chi square test, Mann-Whitney test, and Spearman correlation analysis were used for analysis. RESULTS: The sample comprised 422 people living with HIV/AIDS (response rate: 81.2%). The prevalence of functional and psychosocial impact of oral disorders was 34.0%. The prevalence of very poor/poor QOL and those who were very dissatisfied/dissatisfied with their health was higher among those with functional and psychosocial impact of oral disorders. There was a negative correlation between the scores on the domains of QOL and the severity of the impact of the oral disorders (r-value ranged from -0.107 to -0.30). CONCLUSION: Individuals with functional and psychosocial impact of oral disorders were found to more frequently rate their QOL as poor/very poor, and were more often dissatisfied with health. The correlation between the scores of QOL and functional and psychosocial impact of oral disorders scores was weak, indicating that they represent different constructs. The measures of functional and psychosocial impact of oral disorders should be complemented by general measures of QOL.


BACKGROUND: Attendance at biannual medical encounters has been proposed as a minimum national standard for adequate engagement in HIV care. Using data from the HIV Outpatient Study, we analyzed how well dates of HIV-related laboratory testing correlated with attendance at biannual medical
encounters. METHODS: HIV Outpatient Study is an open prospective cohort study of HIV-infected patients receiving outpatient care in the United States. The data set included dates for laboratory measurements and medical encounters. We included patients with at least 1 HIV laboratory test (CD4 cell count or plasma HIV RNA viral load) during 2010-2011. An HIV laboratory test was defined as associated with a medical encounter if it occurred within 3 weeks of the encounter. We assessed the predictive value of HIV laboratory tests as a proxy for adequate engagement in clinical care, defined as having had >/=2 HIV laboratory tests within 1 year and performed >90 days apart. RESULTS: A total of 10,321 HIV laboratory tests were recorded from 2909 patients. Adequate engagement in clinical care based on medical encounters was 88.2% and 77.3% when based on laboratory tests. Using HIV laboratory tests to assess engagement had a sensitivity of 85.7%, specificity of 86.0%, and positive and negative predictive values of 97.9% and 44.5%, respectively. Of the 22.7% classified as not engaged in care by the proxy measure, over half (55.5%) were actually engaged. CONCLUSIONS: Using laboratory monitoring reliably classified persons as engaged in care. Of the 22.7% of patients classified as not engaged in care, most were actually engaged.


By 2015, 50% of HIV-infected individuals in the United States will be 50 years of age and older. Examining successful coping in older adults with HIV could expand existing coping toolkits, enhance disease management, and improve overall outcomes. We explored how urban, community-dwelling older adults (N = 40) coped with HIV infection, comorbidities, and related stressors. Participants completed an individual or focus group interview session using open-ended questions formulated from extended participant observation. Data were analyzed for theme development using interpretive hermeneutics and qualitative content analysis. Stressors included HIV, comorbidities, fear, anger, stigma, and finances. Three themes for successful coping were identified: accessing support, helping selves and helping others, and tapping into spirituality. Participants engaged in active, meaning-based strategies to successfully cope with HIV and related stressors. These strategies can be adapted for other older adults with HIV, leading to holistic care and improved outcomes.


Although HIV and aging are two well-established medical and economic domains, their intersection represents an emerging area of study. Older adults with HIV, who sill comprise 50% of the US HIV-infected population by 2015, are disadvantaged as evidenced by disproportionately poorer health outcomes. The Oaxaca Decomposition Approach (ODA) was used to analyze data from the Research on Older Adults with HIV (ROAH) Study of 1,000 older adults with HIV in New York City (NYC). This paper establishes the sources of health disparities for Hispanics with HIV compared to a match group of Non-Hispanics with HIV. The ODA analyses shows that Hispanics on average have higher levels of declining health and increased depression attributable to the discrimination factor.


BACKGROUND: In the human immunodeficiency virus (HIV) care continuum, retention in HIV medical care and viral suppression are key goals to improve individual health outcomes and reduce HIV transmission. National data from clinical providers are lacking. METHODS: HIV providers funded by the Ryan White HIV/AIDS Program (RWHAP) annually report demographic, service, and clinical data using encrypted unique client identifiers, and data are processed and de-duplicated to create a single record for each client. We calculated retention and viral suppression for clients who received RWHAP-funded HIV medical care in 2011. We conducted multivariate logistic regression to identify factors associated with these outcomes. RESULTS: In 2011, an estimated 512911 HIV-infected clients received at least 1 RWHAP-funded non-AIDS Drug Assistance Program service. Of these, 317458(61.8%) were seen for at
least 1 HIV medical care visit. Of these, 82.2% were retained in HIV medical care, and 72.6% achieved viral suppression. Viral suppression was higher among retained clients (77.7%) vs clients who were not retained (58.3%). The lowest levels of retention and viral suppression were among individuals aged 13-34 years. CONCLUSIONS: The RWHAP provides HIV medical care and support services for more than half a million poor and underinsured individuals living with HIV in the United States. Rates of retention and viral suppression are relatively high compared with other national estimates but demonstrate room for improvement, especially among youth and racial minorities. Additional improvements in retention and viral suppression will contribute to achieving the goals of the National HIV/AIDS Strategy and improve individual and public health.


Objectives: We assessed how health care-related stigma, global medical mistrust, and personal trust in one's health care provider relate to engaging in medical care among Black men who have sex with men (MSM). METHODS: In 2012, we surveyed 544 Black MSM attending a community event. We completed generalized linear modeling and mediation analyses in 2013. RESULTS: Twenty-nine percent of participants reported experiencing racial and sexual orientation stigma from health care providers and 48% reported mistrust of medical establishments. We found that, among HIV-negative Black MSM, those who experienced greater stigma and global medical mistrust had longer gaps in time since their last medical exam. Furthermore, global medical mistrust mediated the relationship between stigma and engagement in care. Among HIV-positive Black MSM, experiencing stigma from health care providers was associated with longer gaps in time since last HIV care appointment. CONCLUSIONS: Interventions focusing on health care settings that support the development of greater awareness of stigma and mistrust are urgently needed. Failure to address psychosocial deterrents will stymie progress in biomedical prevention and cripple the ability to implement effective prevention and treatment strategies.


OBJECTIVES: Community viral load (CVL) estimates vary based on analytic methods. We extended the CVL concept and used data from the Veterans Health Administration (VA) to determine trends in the health care system viral load (HSVLS) and its sensitivity to varying definitions of the clinical population and assumptions regarding missing data. METHODS: We included HIV-infected patients in the Veterans Aging Cohort Study, 2000-2010, with at least one documented CD4 count, HIV-1 RNA or antiretroviral prescription (n = 37,318). We created 6-month intervals including patients with at least one visit in the past 2 years. We assessed temporal trends in clinical population size, patient clinical status and mean HSVL and explored the impact of varying definitions of the clinical population and assumptions about missing viral load. RESULTS: The clinical population size varied by definition, increasing from 16 000-19 000 patients in 2000 to 23 000-26 000 in 2010. The proportion of patients with suppressed HIV-1 RNA increased over time. Over 20% of patients had no viral load measured in a given interval or the past 2 years. Among patients with a current HIV-1 RNA, mean HSVL decreased from 97 800 HIV-1 RNA copies/mL in 2000 to 2000 copies/mL in 2010. When current HIV-1 RNA data were unavailable and the HSVL was recalculated using the last available HIV-1 RNA, HSVL decreased from 322 300 to 9900 copies/mL. HSVL was underestimated when using only current data in each interval. CONCLUSIONS: The CVL concept can be applied to a health care system, providing a measure of health care quality. Like CVL, HSVL estimates depend on definitions of the clinical population and assumptions about missing data.


OBJECTIVE: Adverse childhood experiences (ACEs), including physical, sexual, and emotional abuse, have been shown to result in a variety of poor outcomes including depression. The majority of research has examined the impact of such events on adolescents and young adults leaving a dearth of
METHODS: Data from the U.S. CDC’s 2010 Behavioral Risk Factor Surveillance Survey (BRFSS) were used to estimate the point prevalence of depression in individuals 60 years of age and greater based on presence or absence of certain ACEs. Depressive symptoms were assessed using eight items from the Patient Health Questionnaire (PHQ). Subjects with a PHQ score of 10 or greater were categorized as depressed. Six different types of ACE were included in the study: parents being physically abusive to each other, being physically harmed by a parent, being sworn at by the parent, being touched sexually by an adult, being forced to sexually touch an adult, and being forced into a sexual encounter. ACEs were categorized as never, single if subject reported it occurring once, or repeated if subject reported multiple episodes. RESULTS: The study sample consisted of 8,051 adults aged 60 years and greater who responded to questions about adverse childhood experiences. The study sample comprised 53% women, 83% Caucasian patients, and had a mean age of 70.4 years. After controlling for age, sex, and race, depression was significantly correlated with repeated ACEs of all types (adjusted odds ratio [AOR] ranging from 2.41 to 9.78, all statistically significant). The only ACE where a single occurrence was significantly associated with late-life depression was forced sexual intercourse (AOR: 2.92, 95% CI: 1.06-8.02). After controlling for all types of abuse in a single model, repeated physical abuse and repeated forced sexual intercourse remained significant (AOR: 2.94, 95% CI: 1.68-5.13; AOR: 3.66, 95% CI: 1.01-13.2, respectively). DISCUSSION: These results indicate a significant association between repeated ACEs and depression in older adults. When controlling for all forms of abuse, repeated physical abuse and forced sexual intercourse are significantly correlated with late-life depression. They emphasize the need to continue developing techniques to help individuals with a history of ACEs in order to decrease their negative effects, not only immediately, but also later in life.


IMPORTANCE: With the emphasis on structural-level interventions that target social determinants of human immunodeficiency virus (HIV) transmission to curb the HIV epidemic, there is a need to develop evaluation models that can detect changes in individual factors associated with HIV-related structural changes. OBJECTIVE: To describe whether structural changes developed and achieved by community coalitions are associated with an effect on individual factors associated with the risk of contracting HIV. DESIGN, SETTING, AND PARTICIPANTS: In this serial cross-sectional survey design, data were collected from 8 cities during 4 rounds of annual surveys from March 13, 2007, through July 29, 2010. Study recruitment took place at venues where the population of focus was known to congregate, such as clubs, bars, community centers, and low-income housing. The convenience sample of at-risk youth (persons aged 12-24 years) included 5337 individuals approached about the survey and 3142 (58.9%) who were screened for eligibility. Of the 2607 eligible participants, 2559 (98.2%) ultimately agreed to participate. INTERVENTIONS: Achievement of locally identified structural changes that targeted public and private entities (eg, federal agencies, homeless shelters, and school systems) with the goal of fostering changes in policy and practice to ultimately facilitate positive behavioral changes aimed at preventing HIV. MAIN OUTCOMES AND MEASURES: Number of sexual partners, partner characteristics, condom use, and history of sexually transmitted infections and HIV testing. RESULTS: Exposure to structural changes was not statistically significantly associated with any of the outcome measures, although some results were in the direction of a positive structural change effect (eg, a 10-unit increase in a structural change score had an odds ratio of 0.88 [95% CI, 0.76-1.03; P = .11] for having an older sexual partner and an odds ratio of 0.91 [95% CI, 0.60-1.39; P = .39] for using a condom half the time or less with a casual partner). CONCLUSIONS AND RELEVANCE: This study evaluated a broad representation of at-risk individuals and assessed the effect of numerous structural changes related to various HIV risk factors. No structural changes as measured in this study were associated with a statistically significant reduction in risk behaviors. These null findings underscore the need for a long-term approach in evaluating structural interventions and the development of more nuanced methods of
quantifying and comparing structural-change initiatives and determining the appropriate strategies for evaluating effect.


The purpose of this study was to examine the independent influence of age on levels of HIV-related stigma experienced by adults living with HIV/AIDS. To accomplish this, cross-sectional data from the Ontario HIV Treatment Network Cohort Study were used to determine whether older age is associated with overall stigma among HIV-positive adults living in Ontario, Canada (n = 960). The relationship was also tested for enacted, anticipated, and internalized stigma. Covariates included sociodemographic (e.g., gender, sexual orientation, race) and psychosocial variables (e.g., depression). Modifying effects of covariates were also investigated. Those 55 and older have significantly lower overall and internalized stigma than adults under age 40, even when accounting for gender, sexual orientation, income, time since diagnosis, depression, maladaptive coping, and social support. Age does not predict enacted or Anticipated Stigma when accounting for the demographic and psychosocial variables. A significant interaction between depression and age suggests that stigma declines with age among those who are depressed but increases to age 50 and then decreases in older age groups among those who are not depressed. Age matters when it comes to understanding stigma among adults living with HIV/AIDS; however, the relationship between age and stigma is complex, varying according to stigma type and depression level.


The Veterans Aging Cohort Study (VACS) Index has previously been used to identify frail HIV-infected persons. However, data demonstrating the independent association between the VACS Index and baseline frailty status is lacking. Furthermore, the ability of the VACS Index to also reflect transitions in frailty status over time is unknown. We used data from the Study to Understand the Natural History of HIV and AIDS in the Era of Effective Therapy (SUN Study) to determine independent association of baseline frailty status with the VACS Index. We also evaluated VACS Index changes with frailty status transitions over time. We included 303 participants (median age 48 years, 76% men, 57% non-Hispanic white, 91% with plasma HIV RNA <400 copies/ml, and median CD4(+) cell count 595 cells/ml) with baseline and follow-up frailty assessments and used the Fried’s criteria to define frailty status. There were 184 (61%) nonfrail, 112 (37%) prefrail, and seven (2%) frail participants at baseline. Prefrail/frail participants had significantly higher median VACS Index scores compared with nonfrail participants (18 versus 10, p<0.001). In multivariable analysis, prefrail/frailty was independently associated with a higher VACS Index score (odds ratio 1.025, p=0.019). After a median follow-up of 12 months, participants who remained prefrail/frail compared to those who remained nonfrail continued to have higher median VACS Index scores. The VACS Index score did not significantly change with transitions in frailty status over time. Our study highlights the potential utility of the VACS Index in frailty assessment within the clinical setting.


Objectives: This study tested the mediating effect of resilience on the relationship between life stress and health-related quality of life (HRQoL) in older people, 50 years of age and older, living with HIV/AIDS (OPLWA). Method: Data from 299 OPLWA were analyzed using structural equation modeling (SEM) to define a novel resilience construct (represented by coping self-efficacy, active coping, hope/optimism, and social support) and to assess mediating effects of resilience on the association between life stress and HRQoL (physical, emotional, and functional/global well-being). Results: SEM analyses showed satisfactory model fit for both resilience and mediational models, with resilience
mediating the associations between life stress and physical, emotional, and functional/global well-being. Conclusion: Resilience may reduce the negative influence of life stress on physical, emotional, and functional/global well-being in OPLWHA. Interventions that build personal capacity, coping skills, and social support may contribute to better management of HIV/AIDS and increase HRQoL.


We examined the association between physical activity (PA), neurocognitive impairment (NCI), and instrumental activities of daily living (IADLs) among older HIV+ persons. One hundred older HIV+ adults completed the International Physical Activity Questionnaire, a neurocognitive battery, and IADL scale. Higher levels of moderate PA were associated with lower odds of NCI (p = 0.01), even when covariates were modeled. The association between moderate PA and NCI was driven by executive function (p = 0.04). Higher levels of moderate PA were also associated with lower odds of IADL Dependence (p = 0.03), although this fell to a trend (p = 0.08) when including covariates. Follow-up analysis showed those with both NCI and IADL Dependence had lower moderate PA than those with neither (p = 0.03). While these cross-sectional findings suggest PA is associated with better neurocognitive and everyday functioning in older HIV+ adults, longitudinal studies utilizing objective PA methods are needed to evaluate directionality and mechanisms.


BACKGROUND: To date, there have been few longitudinal studies of food insecurity among people living with HIV (PLWH). Food insufficiency (FI) is one dimension of the food insecurity construct that refers to periods of time during which individuals have an inadequate amount of food intake because of limited resources. The aim of this analysis was to examine the relationship between FI and HIV treatment outcomes among HIV-infected individuals in New York City (NYC). METHODS:: Associations between FI ('consistent' - food insufficient on both of the last two assessments, 'inconsistent' - food insufficient on one of the last two assessments, or neither) and clinical indicators of HIV disease progression (viral load >200 copies/mL, CD4 count <200 cells/mm) were analyzed for NYC Ryan White Part A food and nutrition program clients who were matched to the NYC HIV surveillance registry and completed two FI assessments between November 2011 and June 2013. RESULTS:: Among 2,118 PLWH in food and nutrition programs, 61% experienced consistent FI and 25% experienced inconsistent FI. In multivariate analyses controlling for sociodemographic characteristics, consistent FI was independently associated with unsuppressed viral load (AOR=1.6, CI= 1.1-2.5). Consistent FI was only associated with low CD4 counts at the bivariate level. CONCLUSIONS:: Future studies should examine biological, structural and psychosocial factors that may explain the relationship between FI and HIV treatment outcomes to inform intervention development. Persistent FI among food and nutrition program clients suggests that services are needed to address underlying needs for financial stability (e.g., vocational counseling) for PLWH.


BACKGROUND: Drug use poses multiple challenges to maintaining physical health among HIV-infected individuals, particularly with regard to disease progression. Few studies, however, have examined the association between the use of crystal methamphetamine ("crystal meth") and HIV disease progression specifically among HIV-infected men who have sex with men (MSM). Understanding this relationship among HIV-infected MSM is particularly critical because of the high rates of crystal meth use reported in the population. METHODS:: Associations between recent crystal meth use and poor HIV medical outcomes (viral load> 200 copies/mL, CD4 count <350 cells/mm) were analyzed for 2896 HIV-infected MSM enrolled in Ryan White Part A programs in the greater New York metropolitan area between November 2010 and June 2012. RESULTS: Crystal meth use (reported by 4%) was
independently associated with unsuppressed viral load (AOR=1.8, CI=1.1-2.9) in multivariate analyses controlling for sociodemographic characteristics. There was no significant relationship between crystal meth use and low CD4 counts. CONCLUSIONS: To date, little research has examined how crystal meth use influences HIV medical outcomes among HIV-infected MSM. This analysis showed a significant independent association between crystal meth use and unsuppressed viral load among MSM in an HIV service population. Future studies should examine biological and psychosocial mediators, moderators and confounders of this relationship to inform intervention development for MSM crystal meth users in HIV care settings.


Antiretroviral therapy has increased the life span of HIV+ individuals; however, HIV-associated neurocognitive disorder (HAND) occurrence is increasing in aging HIV patients. Previous studies suggest HIV infection alters autophagy function in the aging CNS and HIV-1 proteins affect autophagy in monocyte-derived cells. Despite these findings, the mechanisms leading to dysregulated autophagy in the CNS remain unclear. Here we sought to determine how HIV Tat dysregulates autophagy in neurons. Tat caused a dose-dependent decrease in autophagosome markers, microtubule-associated protein-1 light chain beta II (LC3II), and sequestosome 1 (SQSTM1), in a membrane-enriched fraction, suggesting Tat increases autophagic degradation. Bafilomycin A1 increased autophagosome number, LC3II, and SQSTM1 accumulation; Tat cotreatment diminished this effect. Tat had no effect when 3-methyladenine or knockdown of beclin 1 blocked early stages of autophagy. Tat increased numbers of LC3 puncta and resulted in the formation of abnormal autophagosomes in vitro. Likewise, in vivo studies in GFAP-Tat tg mice showed increased autophagosome accumulation in neurons, altered LC3II levels, and neurodegeneration. These effects were reversed by rapamycin treatment. Tat colocalized with autophagosome and lysosomal markers and enhanced the colocalization of autophagosome with lysosome markers. Furthermore, co-IP studies showed that Tat interacts with lysosomal-associated membrane protein 2A (LAMP2A) in vitro and in vivo, and LAMP2A overexpression reduces Tat-induced neurotoxicity. Hence, Tat protein may induce autophagosome and lysosome fusion through interaction with LAMP2A leading to abnormal neuronal autophagy function and dysregulated degradation of critical intracellular components. Therapies targeting Tat-mediated autophagy alterations may decrease neurodegeneration in aging patients with HAND.


Over 50% of HIV-infected (HIV+) persons are expected to be over age 50 by 2015. The pathogenic effects of HIV, particularly in cases of long-term infection, may intersect with those of age-related illnesses and prolonged exposure to combined antiretroviral therapy (cART). One potential outcome is an increased prevalence of neurocognitive impairment in older HIV+ individuals, as well as an altered presentation of HIV-associated neurocognitive disorders (HANDs). In this study, we employed stepwise regression to examine 24 features sometimes associated with HAND in 40 older (55-73 years of age) and 30 younger (32-50 years of age) HIV+, cART-treated participants without significant central nervous system confounds. The features most effective in generating a true assessment of the likelihood of HAND diagnosis differed between older and younger cohorts, with the younger cohort containing features associated with drug abuse that were correlated to HAND and the older cohort containing features that were associated with lipid disorders mildly associated with HAND. As the HIV-infected population grows and the demographics of the epidemic change, it is increasingly important to re-evaluate features associated with neurocognitive impairment. Here, we have identified features, routinely collected in primary care settings, that provide more accurate diagnostic value than a neurocognitive screening measure among younger and older HIV individuals.
The Centers for Disease Control and Prevention recommends routine human immunodeficiency virus (HIV) testing of every client presenting for services in venues where HIV prevalence is high. Because older adults (aged >/=50 years) have particularly poor prognosis if they receive their diagnosis late in the course of HIV disease, any screening provided to younger adults in these venues should also be provided to older adults. We examined aging-related disparities in recent (past 12 months) and ever HIV testing in a probability sample of at-risk adults (N = 1238) seeking services in needle exchange sites, sexually transmitted disease clinics, and Latino community clinics that provide HIV testing. Using multiple logistic regression with generalized estimating equations, we estimated associations between age category (<50 years vs. >/=50 years) and each HIV testing outcome. Even after controlling for covariates such as recent injection drug use, older adults had 40% lower odds than younger adults did of having tested in the past 12 months (odds ratio [OR] = 0.6; 95% confidence interval [CI] = 0.40-0.90) or ever (OR = 0.6; 95% CI = 0.40-0.90). Aging-related disparities in HIV testing exist among clients of these high HIV prevalence venues and may contribute to known aging-related disparities in late diagnosis of HIV infection and poor long-term prognosis.

We describe the implementation of a comprehensive HIV stigma-reduction and wellness-enhancement community intervention that focused on people living with HIV (PLWH), as well as people living close to them (PLC) from six designated groups. A holistic multiple case study design was used in urban and rural settings in the North West Province, South Africa. Purposive voluntary sampling was used to recruit the PLWH group; snowball sampling was used for the PLCs. Data were analyzed by means of open coding and text document analysis. The comprehensive nature of the intervention ensured enhancement in relationships in all groups. The increase in knowledge about stigma, coping with it, and improved relationships led to PLWH feeling less stigmatized and more willing to disclose. PLCs became aware of their stigmatizing behaviors and were empowered to lead stigma reduction in their communities. Many community members were reached through these initiatives.

BACKGROUND: The efficacy and safety of bariatric surgery have been poorly studied in patients affected with HIV. Although sleeve gastrectomy (SG) is the most widely used procedure in many countries, most of the published literature reported results with the gastric bypass (GBP) procedure on morbidly obese HIV patients. METHODS: We have evaluated retrospectively, in eight consecutive patients who underwent a SG, its effect in weight loss and its impact on the treatment and on the markers of HIV infection. RESULTS: Seven out of eight patients were females. The mean age was 46 years, with a median preoperative BMI of 42 kg/m2. The mean duration of HIV infection and CD4 cell count were 13.4 years and 457 cells/mm3, respectively. The mean weight loss was 37 kg in 20 months, the excess BMI loss was 80.8 +/- 30.9 %, and the excess weight loss is 81.5 +/- 28.9 % with one minor complication. CD4 counts were unchanged. Three patients had therapy modifications that were unrelated to bariatric surgery. Two patients had a therapeutic drug monitoring before and after the intervention. Plasma concentrations remained in therapeutic levels after the SG. Most comorbidities disappeared postoperatively, decreasing the cardiovascular risk. CONCLUSIONS: The sleeve gastrectomy was safe and effective with no consequences on CD4 counts and viral load in HIV-affected obese patients. It should be considered as a part of the treatment in morbidly obese HIV patients.

PURPOSE: Health literacy is lower in minorities and older adults, and has been associated with nonadherence to medications, treatment, and care in people living with human immunodeficiency virus (HIV). Likewise, African Americans with HIV are more likely to be nonadherent to their HIV medications, less likely to keep their clinic appointments related to HIV treatment and care, and more likely to die during hospitalizations than their ethnic counterparts. The present study explored the preferences of older African Americans with HIV for a health literacy intervention to promote HIV management.

PATIENTS AND METHODS: In this qualitative study, 20 older adult African Americans living with HIV were recruited from an HIV/acquired immunodeficiency syndrome outpatient clinic in the southeastern region of the US. Using patient-centered participatory design methods, semi-structured individual interviews were conducted to determine patient preferences for intervention development and design. Health literacy was also measured using the Rapid Estimate of Adult Literacy in Medicine - Revised (REALM-R). RESULTS: Four major themes emerged related to intervention development and design: keep health information simple; use a team-based approach for health education; tailor teaching strategies to patients’ individual needs; and account for patients’ low experience, but high interest, in technology. Forty-five percent of the study population had low health literacy based on the revised Rapid Estimate of Adult Literacy in Medicine. CONCLUSION: Future interventions that target minorities and older adults living with HIV should consider patients’ learning needs, sex-specific and mental health needs, and delivery approaches, in order to increase uptake and improve disease management and health outcomes.


Hazardous drinking is common among persons living with HIV/AIDS (PLWHA) and associated with numerous negative health consequences. Despite the well-established negative effects of hazardous drinking among PLWHA, scholarly work has neglected to explore the role of such drinking in regard to anxiety/depressive symptoms and HIV symptom expression. The current study investigated associations between hazardous drinking and anxiety/depressive symptoms and HIV symptoms among PLWHA. Participants (n = 94; 88.3% male; Mage = 48.55; SD = 9.15) included PLWHA recruited from AIDS service organizations in the northeast. Hazardous drinking was significantly associated with anxiety/depressive symptoms and HIV symptom expression above and beyond the variance accounted for by sex, race, recruitment site, and CD4 T-Cell count, as well as other cognitive-affective variables (emotion dysregulation, distress intolerance, and anxiety sensitivity). The present results provide empirical support that hazardous drinking is indeed related to depressive and anxiety symptoms as well as HIV.
symptom distress and that this effect is not attributable to other factors commonly related to both alcohol use problems and emotional distress among PLWHA. Results highlight the importance of alcohol interventions for excessive drinking specifically tailored for PLWHA to facilitate better mental and physical health adjustment.


The population of older people living with HIV in the United States is growing. Little is known about specific challenges older HIV-infected women face in coping with the disease and its attendant stressors. To understand these issues for older women, we conducted semi-structured in-depth interviews with 15 women (13 African American, 2 Caucasian) 50 years of age and older (range 50-79 years) in HIV care in the southeastern United States, and coded transcripts for salient themes. Many women felt isolated and inhibited from seeking social connection due to reluctance to disclose their HIV status, which they viewed as more shameful at their older ages. Those receiving social support did so mainly through relationships with family and friends, rather than romantic relationships. Spirituality provided great support for all participants, although fear of disclosure led several to restrict connections with a church community. Community-level stigma-reduction programs may help older HIV-infected women receive support.


PURPOSE OF REVIEW: To summarize current knowledge and provide perspective on relationships between human genetic variants, antiretroviral medications, and aging-related complications of HIV-1 infection. RECENT FINDINGS: Human genetic variants have been convincingly associated with interindividual variability in antiretroviral toxicities, drug disposition, and aging-associated complications in HIV-1 infection. Screening for HLA-B5701 to avoid abacavir hypersensitivity reactions has become a routine part of clinical care, and has markedly improved drug safety. There are well established pharmacogenetic associations with other agents (efavirenz, nevirapine, atazanavir, dolutegravir, and others), but this knowledge has yet to have substantial impact on HIV-1 clinical care. As metabolic complications including diabetes mellitus, dyslipidemia, osteoporosis, and cardiovascular disease are becoming an increasing concern among individuals who are aging with well controlled HIV-1 infection, human genetic variants that predispose to these complications also become more relevant in this population. SUMMARY: Pharmacogenetic knowledge has already had considerable impact on antiretroviral prescribing. With continued advances in the field of human genomics, the impact of pharmacogenomics on HIV-1 clinical care and research is likely to continue to grow in importance and scope.


HIV testing efforts increased in recent years to reduce the percentage of persons with HIV unaware of their infection and to detect HIV early. An analysis of CD4 data from national HIV surveillance indicates that diagnosis delays decreased during 2003-2011; on average, persons diagnosed in 2011 had been infected 5.6 years before their diagnosis compared with 7.0 years among those diagnosed in 2003. Diagnosis delays were longer among females, blacks, Hispanics/Latinos, and younger persons, but
shorter among men who have sex with men, compared with their counterparts. Continued efforts to implement routine testing can help reduce diagnosis delays.


OBJECTIVES: The proportion of people living with HIV/AIDS in the ageing population (>50 years old) is increasing. We aimed to explore the relationship between older age and treatment outcomes in HIV-positive persons from the Asia Pacific region. METHODS: Patients from the Australian HIV Observational Database (AHOD) and the TREAT Asia HIV Observational Database (TAHOD) were included in the analysis. We used survival methods to assess the association between older age and all-cause mortality, as well as time to treatment modification. We used regression analyses to evaluate changes in CD4 counts after combination antiretroviral therapy (cART) initiation and determined the odds of detectable viral load, up to 24 months of treatment. RESULTS: A total of 7142 patients were included in these analyses (60% in TAHOD and 40% in AHOD), of whom 25% were >50 years old. In multivariable analyses, those aged > 50 years were at least twice as likely to die as those aged 30-39 years [hazard ratio (HR) for 50-59 years: 2.27; 95% confidence interval (CI) 1.34-3.83; HR for > 60 years: 4.28; 95% CI 2.42-7.55]. The effect of older age on CD4 count changes was insignificant (p-trend=0.06). The odds of detectable viral load after cART initiation decreased with age (p-trend=< 0.0001). The effect of older age on time to first treatment modification was insignificant (p-trend=0.21). We found no statistically significant differences in outcomes between AHOD and TAHOD participants for all endpoints examined. CONCLUSIONS: The associations between older age and typical patient outcomes in HIV-positive patients from the Asia Pacific region are similar in AHOD and TAHOD. Our data indicate that 'age effects' traverse the resource-rich and resource-limited divide and that future ageing-related findings might be applicable to each setting.


Erectile dysfunction and other forms of sexual dysfunction are highly prevalent among HIV+ men who have sex with men (MSM). Research has not previously identified the mechanisms by which depression may be associated with sexual dysfunction among HIV-positive and HIV-seronegative (HIV-negative) MSM. The present study examined the role of antidepressant use, stimulant use, and smoking as mediators of the relation between depression and sexual dysfunction among HIV-positive and HIV-negative MSM. Participants enrolled in the Multicenter AIDS Cohort Study, an ongoing prospective study of the natural and treated histories of HIV infection among MSM in the United States, completed a modified version of the International Index of Erectile Function for MSM. The study sample included 1,363 participants, with 619 HIV-positive men and 744 HIV-negative men. A structural equation model examined depression as a predictor of subsequent sexual dysfunction, mediated by antidepressant use, stimulant use, and smoking. Depression predicted subsequent sexual function among both HIV-negative and HIV-positive MSM. This effect appeared to be both a direct effect and an indirect effect via antidepressant use. Findings suggest that antidepressant medication use may partially explain sexual dysfunction among MSM.


BACKGROUND: Human immunodeficiency virus (HIV)-associated neurocognitive disorders (HAND) can show variable clinical trajectories. Previous longitudinal studies of HAND typically have been
brief, did not use adequate normative standards, or were conducted in the context of a clinical trial, thereby limiting our understanding of incident neurocognitive (NC) decline and recovery. METHODS: We investigated the incidence and predictors of NC change over 16-72 (mean, 35) months in 436 HIV-infected participants in the CNS HIV Anti-Retroviral Therapy Effects Research cohort. Comprehensive laboratory, neuromedical, and NC assessments were obtained every 6 months. Published, regression-based norms for NC change were used to generate overall change status (decline vs stable vs improved) at each study visit. Survival analysis was used to examine the predictors of time to NC change. RESULTS: Ninety-nine participants (22.7%) declined, 265 (60.8%) remained stable, and 72 (16.5%) improved. In multivariable analyses, predictors of NC improvements or declines included time-dependent treatment status and indicators of disease severity (current hematocrit, albumin, total protein, aspartate aminotransferase), and baseline demographics and estimated premorbid intelligence quotient, non-HIV-related comorbidities, current depressive symptoms, and lifetime psychiatric diagnoses (overall model P < .0001). CONCLUSIONS: NC change is common in HIV infection and appears to be driven by a complex set of risk factors involving HIV disease, its treatment, and comorbid conditions.


Methamphetamine (METH) abuse is frequent in individuals infected with human immunodeficiency virus type-1 (HIV-1) and is suspected to aggravate HIV-associated neurocognitive disorders (HAND). METH is a psychostimulant that compromises several neurotransmitter systems and HIV proteins trigger neuronal injury but the combined effects of viral infection and METH abuse are incompletely understood. In this study we treated transgenic mice expressing the HIV envelope protein gp120 in the brain (HIV-1 gp120tg) at 3-4 months of age with an escalating-dose, multiple-binge METH regimen. The long-term effects were analyzed after 6-7 months of drug abstinence employing behavioral tests and analysis of neuropathology, electrophysiology and gene expression. Behavioral testing showed that both HIV-1 gp120tg and WT animals treated with METH displayed impaired learning and memory. Neuropathological analysis revealed that METH similar to HIV-1 gp120 caused a significant loss of neuronal dendrites and pre-synaptic terminals in hippocampus and cerebral cortex of WT animals. Electrophysiological studies in hippocampal slices showed that METH exposed HIV-1 gp120tg animals displayed reduced post-tetanic potentiation, whereas both gp120 expression and METH lead to reduced long-term potentiation. A quantitative reverse transcription-polymerase chain reaction array showed that gp120 expression, METH and their combination each caused a significant dysregulation of specific components of GABAergic and glutamatergic neurotransmission systems, providing a possible mechanism for synaptic dysfunction and behavioral impairment. In conclusion, both HIV-1 gp120 and METH caused lasting behavioral impairment in association with neuropathology and altered gene expression. However, combined METH exposure and HIV-1 gp120 expression resulted in the most pronounced, long lasting pre- and post-synaptic alterations coinciding with impaired learning and memory.


The HIV incidence among Thai men who have sex with men (MSM) enrolled in the Bangkok MSM Cohort Study (BMCS) has remained high since its inception in 2006. The purpose of this BMCS analysis was to determine: (1) changes in three HIV-risk behaviors (unprotected anal intercourse (UAI), recreational drug use, and multiple sexual partners i.e., more than four male/transgender partner) over time; and (2) factors associated with each one separately. Thai MSM aged 18 years or older and living in Bangkok were eligible to participate in the BMCS. At each follow-up visit, participants were asked to report their sexual and drug behaviors in the previous 4 months. We conducted a longitudinal analysis using generalized estimating equations logistic regression that included 1,569 MSM who were enrolled from 2006 to 2010 and contributed at least one follow-up visit. For each four-month visit increase, we
found a 2, 1, and 1 % decrease in odds for reported UAI, recreational drug use, and multiple sexual partners, respectively. We found significant predictors associated with three HIV-risk behaviors such as binge drinking, participation in group sex, and use of erectile dysfunction drugs. The statistically significant decrease in odds of HIV-risk behaviors among the participants is encouraging; however, continued vigilance is required to address the factors associated with HIV-risk behaviors through currently available interventions reaching MSM.


Individuals living with HIV who are optimally treated with combination antiretroviral therapy (cART) can now lead an extended life. In spite of this remarkable survival benefit from viral suppression achieved by cART in peripheral blood, the rate of mild to moderate cognitive impairment remains high. A cognitive decline that includes impairments in attention, learning and executive function is accompanied by increased rates of mood disorders that together adversely impact the daily life of those with chronic HIV infection. The evidence is clear that cells in the brain are infected with HIV that has crossed the blood–brain barrier both as cell-free virus and within infected monocytes and T cells. Viral proteins that circulate in blood can induce brain endothelial cells to release cytokines, invoking another source of neuroinflammation. The difficulty of efficient delivery of cART to the central nervous system (CNS) contributes to elevated viral load in the CNS, resulting in a persistent HIV-associated neurocognitive disorders (HAND). The pathogenesis of HAND is multifaceted, and mounting evidence indicates that immune cells play a major role. HIV-infected monocytes and T cells not only infect brain resident cells upon migration into the CNS but also produce proinflammatory cytokines such as TNF and IL-1ss, which in turn, further activate microglia and astrocytes. These activated brain resident cells, along with perivascular macrophages, are the main contributors to neuroinflammation in HIV infection and release neurotoxic factors such as excitatory amino acids and inflammatory mediators, resulting in neuronal dysfunction and death. Cytokines, which are elevated in the blood of patients with HIV infection, may also contribute to brain inflammation by entering the brain from the blood. Host factors such as aging and co-morbid conditions such as cytomegalovirus co-infection and vascular pathology are important factors that affect the HIV-host immune interactions in HAND pathogenesis. By these diverse mechanisms, HIV-1 induces a neuroinflammatory response that is likely to be a major contributor to the cognitive and behavior changes seen in HIV infection.


Visual inspection with acetic acid (VIA) is becoming a more widely recommended and implemented screening tool for cervical cancer prevention programs in low-resource settings. Many of these settings have a high prevalence of HIV-infected women. We carried out a cross-sectional validation study to define the sensitivity, specificity and predictive values of VIA among HIV-infected women. Women enrolled in HIV care at the Family AIDS Care and Education Services clinic in Kisumu, Kenya, were recruited for participation. All participants underwent VIA followed by colposcopy performed by a second blinded clinician. At colposcopy, lesions suspicious for cervical intraepithelial neoplasia 2 or greater (CIN2+) were biopsied. Disease status was determined by final histopathologic diagnosis in women who underwent biopsies. A satisfactory colposcopy with no lesions was considered a negative result. From October 2010 to June 2012, 1,432 women underwent VIA and colposcopy. A total of 514 (35.7%) women had a positive VIA, and 179 (12.2%) had CIN2+ confirmed by colposcopically directed biopsy. Sensitivity, specificity, positive and negative predictive values of VIA for CIN2+ were 86.6, 71.6, 30.3 and 97.4%, respectively. Specificity, but not sensitivity, increased with older age. Among older women, sensitivity was affected by CD4+ count and use of antiretroviral therapy. Although they are impacted by age and immune status, test characteristics for VIA among HIV-infected women are similar to what has been reported for general populations. Recommendations to use VIA as a screening tool should not vary by HIV status.

BACKGROUND: Substantial evidence gaps remain regarding human immunodeficiency virus (HIV) intervention strategies that improve engagement in care (EiC) and viral load suppression (VLS). We assessed EiC and VLS before and after enrollment in a comprehensive intervention for persons at risk of poor HIV care outcomes. METHODS: New York City’s Ryan White Part A HIV Care Coordination Program (CCP), launched at 28 agencies in 2009, applies multiple strategies to promote optimal utilization of medical and social services. Using laboratory test records from an HIV surveillance registry, we examined pre-post outcomes among 3641 CCP clients enrolled before April 2011. For the year before and after enrollment, we assessed EiC (defined as >/=2 tests, >/=90 days apart, with >/=1 in each half-year) and VLS (defined as viral load [VL] </=200 copies/mL on latest VL test in the second half of the year). We estimated relative risks (RRs), comparing pre- and postenrollment proportions achieving EiC and VLS. RESULTS: Among newly diagnosed clients, 90.5% (95% confidence interval [CI], 87.9%-93.2%) and 66.2% (95% CI, 61.9%-70.6%) achieved EiC and VLS, respectively. Among previously diagnosed clients, EiC increased from 73.7% to 91.3% (RR = 1.24; 95% CI, 1.21-1.27) and VLS increased from 32.3% to 50.9% (RR = 1.58; 95% CI, 1.50-1.66). Clients without evidence of HIV care during the 6 months preenrollment contributed most to overall improvements. Pre-post improvements were robust, retaining statistical significance within most sociodemographic and clinical subgroups, and in 89% (EiC) and 75% (VLS) of CCP agencies. CONCLUSIONS: Clients in comprehensive HIV care coordination for persons with evident barriers to care showed substantial and consistent improvement in short-term outcomes.


This systematic review was undertaken to determine the extent to which adult subjects representing sex (female), race (nonwhite), and age (>50 years) categories are included in clinical studies of HIV curative interventions and thus, by extension, the potential for data to be analyzed that may shed light on the influence of such demographic variables on safety and/or efficacy. English-language publications retrieved from PubMed and from references of retrieved papers describing clinical studies of curative interventions were read and demographic, recruitment year, and intervention-type details were noted. Variables of interest included participation by sex, age, and race; changes in participation rates by recruitment year; and differences in participation by intervention type. Of 151 publications, 23% reported full demographic data of study enrollees, and only 6% reported conducting efficacy analyses by demographic variables. Included studies recruited participants from 1991 to 2011. No study conducted safety analyses by demographic variables. The representation of women, older people, and nonwhites did not reflect national or international burdens of HIV infection. Participation of demographic subgroups differed by intervention type and study location. Rates of participation of demographic groups of interest did not vary with time. Limited data suggest efficacy, particularly of early therapy initiation followed by treatment interruption, may vary by demographic variables, in this case sex. More data are needed to determine associations between demographic characteristics and safety/efficacy of curative interventions. Studies should be powered to conduct such analyses and cure-relevant measures should be standardized.


Concerns remain for an increased myocardial infarction (MI) risk among HIV-infected individuals. We conducted a cohort study evaluating MI risk from 1996 to 2011 by HIV status. The adjusted MI rate ratio for HIV status declined over time, reaching 1.0 (95% CI: 0.7-1.4) in 2010-2011, the most recent study period.

BACKGROUND: Human immunodeficiency virus (HIV) and combination antiretroviral therapy (cART) may both contribute to the higher prevalence of osteoporosis and osteopenia in HIV-infected individuals. METHODS: Using dual-energy X-ray absorptiometry, we compared lumbar spine, total hip, and femoral neck bone mineral density (BMD) in 581 HIV-positive (94.7% receiving cART) and 520 HIV-negative participants of the AGEhIV Cohort Study, aged >/=45 years. We used multivariable linear regression to investigate independent associations between HIV, HIV disease characteristics, ART, and BMD. RESULTS: The study population largely consisted of men who have sex with men (MSM). Osteoporosis was significantly more prevalent in those with HIV infection (13.3% vs 6.7%; P<.001). After adjustment for body weight and smoking, being HIV-positive was no longer independently associated with BMD. Low body weight was more strongly negatively associated with BMD in HIV-positive persons with a history of a Centers for Disease Control and Prevention class B or C event. Interestingly, regardless of HIV status, younger MSM had significantly lower BMD than older MSM, heterosexual men, and women. CONCLUSIONS: The observed lower BMD in treated HIV-positive individuals was largely explained by both lower body weight and more smoking. Having experienced symptomatic HIV disease, often associated with weight loss, was another risk factor. The low BMD observed in younger MSM remains unexplained and needs further study.


Resting EEGs of 40 people living with HIV (PLWH) on long-term antiretroviral treatment were examined for z-scored deviations from a healthy control (normative database) to examine the main and interaction effects of depression and gender. Regions of interest were frontal (alpha) and central (all bands) for interhemispheric asymmetries in quantitative EEGs and theta in the rostral anterior cingulate cortex (rACC) in low-resolution electromagnetic tomography (LORETA). Z-scored normed deviations of depressed PLWH, compared with nondepressed, showed right-dominant interhemispheric asymmetries in all regions. However, after adjusting for multiple testing, significance remained only central for theta, alpha, and beta. Reversed (left-dominant) frontal alpha asymmetry is a potential EEG marker of depression in the HIV negative population that was not reversed in depressive PLWH; however, corresponding with extant literature, gender had an effect on the size of frontal alpha asymmetry. The LORETA analysis revealed a trending interactional effect of depression and gender on theta activity in the rACC in Brodmann area 32. We found that compared to men, women had greater right-dominant frontal alpha-asymmetry and elevated theta activity in voxels of the rACC, which may indicate less likelihood of depression and a higher likelihood of response to antidepressants. In conclusion, subtle EEG deviations, such as right-dominant central theta, alpha, and beta asymmetries and theta activity in the rACC may mark HIV-related depressive symptoms and may predict the likelihood of response to antidepressants but gender effects need to be taken into account. Although this study introduced the use of LORETA to examine the neurophysiological correlates of negative affect in PLWH, further research is needed to assess the utility of this tool in diagnostics and treatment monitoring of depression in PLWH.


OBJECTIVES: Improved survival has shifted the HIV epidemic in the developed world towards more individuals >50 years of age. Older individuals, with new or longstanding HIV infection, are at greater risk for HIV-related and non-HIV-related conditions, compounding the burden and complexity of HIV management. The aim of the study was to examine the impact of age on the cost of HIV care in a well-defined HIV-infected population. METHODS: All HIV-infected individuals >16 years old receiving HIV care between 1 January 2000 and 1 January 2011 were included in the study. The costs of antiretroviral therapy (ART), HIV-related out-patient care and HIV-related in-patient care were collected using mean cost per person, per month (PPPM) as the comparator variable for the comparison between older (>50
years old) and younger (≤ 50 years old) patients. RESULTS: The proportion of older patients increased from 9.6% to 25.4% and proportional costs increased from 25% to 31% from 1999 to 2010. Older patients were more likely than younger patients to be on ART (89% vs. 69%, respectively; P<0.01) and to have AIDS (29% vs. 20%, respectively; P<0.05) but had similar median CD4 counts (404 vs. 396 cells/μL, respectively; not significant). They incurred higher costs for all aspects of HIV care throughout the entire 12 years. By 2010, the mean PPPM cost of HIV care for longstanding older patients was $1325 compared with $1075 for younger patients. More expensive ART as a consequence of more complex regimens, more comorbid interactions and greater adherence accounted for most of the cost difference.

CONCLUSIONS: The aging of the HIV-infected population in care is leading to increased HIV care costs. Health care planners and funding agencies need to be aware of the impact of this important shift in HIV demographics on the overall costs of HIV care.


BACKGROUND: A better understanding of the relationship between depression and HIV-related outcomes, particularly as it relates to adherence to treatment, is critical to guide effective support and treatment of individuals with HIV and depression. We examined whether depression was associated with attrition from care in a cohort of 610 HIV-infected adults in rural Rwanda and whether this relationship was mediated through suboptimal adherence to treatment. METHODS: The association between depression and attrition from care was evaluated with a Cox proportional hazard model and with mediation methods that calculate the direct and indirect effects of depression on attrition and are able to account for interactions between depression and suboptimal adherence. Depression was assessed with the Hopkins Symptom Checklist-15; attrition was defined as death, treatment default, or loss to follow-up. RESULTS: Baseline depression was significantly associated with time to attrition after adjustment for receipt of community-based accompaniment, physical functioning quality of life score, and CD4 cell count (HR=2.40, 95% CI 1.27 to 4.52, p=0.005). In multivariable mediation analysis, we found no evidence that the association between depression and attrition after 3 months was mediated by suboptimal adherence (direct effect of depression on attrition: OR=3.90 (1.26 to 12.04), p=0.02; indirect effect: OR=1.07 (0.92 to 1.25), p=0.38). CONCLUSIONS: Even in the context of high antiretroviral therapy adherence, depression may adversely influence HIV outcomes through a pathway other than suboptimal adherence. Treatment of depression is critical to achieving good mental health and retention in HIV-infected individuals with depression.


OBJECTIVES: In HIV-uninfected populations, obstructive sleep apnoea (OSA) is commonly associated with cardiovascular disease, metabolic syndrome, and cognitive impairment. These comorbidities are common in HIV-infected patients, but there are scarce data regarding OSA in HIV-infected patients. Therefore, we examined the prevalence and correlates of OSA in a cohort of HIV-infected and uninfected patients. METHODS: An observational cohort study was carried out. Electronic medical record and self-report data were examined in patients enrolled in the Veterans Aging Cohort Study (VACS) between 2002 and 2008 and followed until 2010. The primary outcome was OSA diagnosis, determined using International Classification of Diseases, 9th edition (ICD-9) codes, in HIV-infected compared with uninfected individuals. We used regression analyses to determine the association between OSA diagnosis, symptoms and comorbidities in adjusted models. RESULTS: Of 3683 HIV-infected and 3641 uninfected patients, 143 (3.9%) and 453 (12.4%) had a diagnosis of OSA (p<0.0001), respectively. HIV-infected patients were more likely to report symptoms associated with OSA such as tiredness and fatigue. Compared with uninfected patients with OSA, HIV-infected patients with OSA were younger, had lower body mass indexes (BMIs), and were less likely to have hypertension. In models adjusting for these traditional OSA risk factors, HIV infection was associated with markedly reduced odds of OSA diagnosis (odds ratio 0.48; 95% confidence interval 0.39-0.60). CONCLUSIONS: HIV-infected
patients are less likely to receive a diagnosis of OSA. Future studies are needed to determine whether the lower prevalence of OSA diagnoses in HIV-infected patients is attributable to decreased screening and detection or to a truly decreased likelihood of OSA in the setting of HIV infection.


Depression and substance use, the most common comorbidities with HIV, are both associated with poor treatment outcomes and accelerated HIV disease progression. Though previous research has demonstrated short-term and follow-up success for cognitive behavioral therapy for adherence and depression (CBT-AD) on depression outcomes among patients with HIV in care and among patients with HIV in active substance abuse treatment for injection drug use (IDU), there is little information regarding possible moderating effects of active use versus abstinence on depression treatment gains. The present study aimed to examine recent substance use at treatment initiation as a moderator of the acute and maintenance effects of CBT-AD on depression. We used data from a two-arm, randomized controlled trial (N = 89) comparing CBT-AD to enhanced treatment as usual in individuals in treatment for IDU. To test whether depression at time of presentation affected outcomes, repeated-measures ANOVAs were conducted for two time frames: (1) acute phase (baseline to post-treatment) (acute) and (2) maintenance phase (baseline to 12-month follow-up). To further examine maintenance of gains, we additionally looked at post-treatment to 12-month follow-up. Depression scores derived from the clinical global impression for severity and the Montgomery-Asberg depression rating scale (MADRS) served as the primary outcome variables. Acute (baseline post treatment) moderation effects were found for those patients endorsing active drug use at baseline in the CBT-AD condition, who demonstrated the greatest reductions in MADRS scores at post-treatment (F[1,76] = 6.78, p = .01) and follow-up (F[1,61] = 5.46, p = .023). Baseline substance use did not moderate differences from post-treatment to 12-month follow-up as depression treatment gains that occurred acutely from baseline to post-treatment were maintained across both patients engaged in substance use and abstainers. We conclude that CBT-AD for triply diagnosed patients (i.e. HIV, depression, and substance dependence) is useful for treating depression for both patients with a history of substance use, as well as patients currently engaged in substance use.


The challenges that face African American women living with HIV are immense. African American women continue to be disproportionately infected and affected by this chronic and life-threatening infection in a complex context of individual experience, interactions with the environment, formal and informal support systems, and cultural belief systems. This article identifies the Theory of Silencing the Self (STS) and a widely known model, the Social Ecological Model (SEM), as a synthesized explanatory framework in helping nurses understand how to address research questions and clinical care that is congruent with the experience of African American women living with HIV infection. In synthesizing the components of these two frameworks, an explanation of the relationship between disempowerment and depression in this population will be uncovered as a key component to making relationships at the individual, family, and community level better. Helping African American women living with HIV
infection to explore and address how choosing to be silent across their life systems will advance healthcare adherence as we currently know it to improved self-management of a chronic, gender-specific, culturally-bound experience of depression.


BACKGROUND: The population of people with opioid use disorders (OUD) is aging. There has been little research on the effects of aging on mortality rates and causes of death in this group. We aimed to compare mortality in older (≥50 years of age) adults with OUD to that in younger (<50 years) adults with OUD and older adults with no history of OUD. We also examined risk factors for specific causes of death in older adults with OUD. METHODS: Using data from the Veteran’s Health Administration National Patient Care Database (2000-2011), we compared all-cause and cause-specific mortality rates in older adults with OUD to those in younger adults with OUD and older adults without OUD. We then generated a Cox regression model with specific causes of death treated as competing risks. RESULTS: Older adults with OUD were more likely to die from any cause than younger adults with OUD. The drug-related mortality rate did not decline with age. HIV-related and liver-related deaths were higher among older OUD compared to same-age peers without OUD. There were very few clinically important predictors of specific causes of death. CONCLUSION: Considerable drug-related mortality in people with OUD suggests a need for greater access to overdose prevention and opioid substitution therapy across the lifespan. Elevated risk of liver-related death in older adults may be addressed through antiviral therapy for hepatitis C virus infection. There is an urgent need to explore models of care that address the complex health needs of older adults with OUD.


Frailty is a clinical syndrome initially characterized in geriatric populations with a hallmark of age-related declines in physiologic reserve and function and increased vulnerability to adverse health outcomes. Recently, frailty has increasingly been recognized as a common and important HIV-associated non-AIDS (HANA) condition. This article provides an overview of our current understanding of frailty and its phenotypic characteristics and evidence that they are related to aging and to chronic inflammation that is associated with aging and also with long-term treated HIV infection. The etiology of this chronic inflammation is unknown but we discuss evidence linking it to persistent infection with cytomegalovirus in both geriatric populations and people living with HIV infection.


As people living with HIV/AIDS (PHAs) achieve more stable health, many have taken on active peer support and professional roles within AIDS service organizations. Although the increased engagement has been associated with many improved health outcomes, emerging program and research evidence have identified new challenges associated with such transition. This paper reports on the results of a qualitative interpretive study that explored the effect of this role transition on PHA service providers’ access to mental health support and self care. A total of 27 PHA service providers of diverse ethno-racial backgrounds took part in the study. Results show that while role transition often improves access to financial and health-care benefits, it also leads to new stress from workload demands, emotional triggers from client’s narratives, feeling of burnout from over-immersion in HIV at both personal and professional levels, and diminished self care. Barriers to seeking support included: concerns regarding confidentiality; self-imposed and enacted stigma associated with accessing mental health services; and boundary issues resulting from changes in relationships with peers and other service providers. Evolving support mechanisms included: new formal and informal peer support networks amongst colleagues or other PHA service providers to address both personal and professional challenges, and having access to professional support offered through the workplace. The findings suggest the need
for increased organizational recognition of HIV support work as a form of emotional labor that places complex demands on PHA service providers. Increased access to employer-provided mental health services, supportive workplace policies, and adequate job-specific training will contribute to reduced work-related stress. Community level strategies that support expansion of social networks amongst PHA service providers would reduce isolation. Systemic policies to increase access to insurance benefits and enhance sector-wide job preparedness and post-employment support will sustain long-term and meaningful involvement of PHAs in service provision.


OBJECTIVES: With HIV treatment prolonging survival and HIV infection now managed as a chronic illness, quality of life (QOL) is important to evaluate in persons living with HIV (PLWH). We assessed at study entry the QOL of antiretroviral-naive PLWH with CD4 counts > 500 cells/μL in the Strategic Timing of AntiRetroviral Treatment (START) clinical trial. METHODS: QOL was assessed with: (1) a visual analogue scale (VAS) for self-assessment of overall current health; (2) the Short-Form 12-Item Version 2 Health Survey((R)) (SF-12V2), for which responses are summarized into eight individual QOL domains plus component summary scores for physical health [the Physical Health Component Summary (PCS)] and mental health [the Mental Health Component Summary (MCS)]. The VAS and eight domain scores were scaled from 0 to 100. Mean QOL measures were calculated overall and by demographic, clinical and behavioural factors. RESULTS: A total of 4631 participants completed the VAS and 4119 the SF-12. The mean VAS score (with standard deviation) was 80.9 +/- 15.7. Mean SF-12 domain scores were lowest for vitality (66.3 +/- 26.4) and mental health (68.6 +/- 21.4), and highest for physical functioning (89.3 +/- 23.0) and bodily pain (88.0 +/- 21.4). Using multiple linear regression, PCS scores were lower (P < 0.001) for Asians, North Americans, female participants, older participants, and those with less education, longer duration of known HIV infection, alcoholism/substance dependence and body mass index >/= 30 kg/m(2). MCS scores were highest (P < 0.001) for Africans, South Americans and older participants, and lowest for female participants, current smokers and those with alcoholism/substance dependence. CONCLUSIONS: In this primarily healthy population, QOL was mostly favourable, emphasizing that it is important that HIV treatments do not negatively impact QOL. Self-assessed physical health summary scores were higher than mental health scores. Factors such as older age and geographical region had different effects on perceived physical and mental health.


BACKGROUND: Appropriate use of highly active antiretroviral therapy (HAART) can markedly decrease the risk of progression to acquired immunodeficiency syndrome (AIDS) and of premature mortality. We aimed to characterize the trends between 1981 and 2013 in AIDS-defining illnesses (ADIs) and in the number AIDS-related deaths in British Columbia (BC), Canada. METHODS: We included data of 3550 HIV-positive individuals, aged 19 years or older, from different administrative databases in BC. We estimated the relative risk of developing an ADI over time using a Negative Binomial model, and we investigated trends in the percentage of all deaths associated with AIDS using generalized additive models. FINDINGS: The number of ADIs has decreased dramatically to its lowest level in 2013. The peak of the AIDS epidemic in BC happened in 1994 with 696 ADIs being reported (rate 42 ADIs per 100 person-years). Since 1997, the number of ADIs decreased from 253 (rate 7 per 100 person-years) to 84 cases in 2013 (rate 1 per 100 person-years) (p-value equals to zero for the trend in the number of ADIs). We have also shown that out of 22 ADIs considered, only PCP maintained its prominent ranking (albeit with much reduced overall prevalence). Finally, we observed that over time very few deaths were related to AIDS-related causes, especially in the most recent years. INTERPRETATION: We showed that the
number of new ADIs and AIDS-related mortality have been decreasing rapidly over time in BC. These results provide further evidence that integrated comprehensive free programs that facilitate testing, and deliver treatment and care to this population can be effective in markedly decreasing AIDS-related morbidity and mortality, thus suggesting that controlling and eventually ending AIDS is possible. FUNDING: The British Columbia Ministry of Health, the US National Institutes of Health, the US National Institute on Drug Abuse, the Canadian Institutes of Health Research, and the Michael Institute for Health Research.


BACKGROUND: Anemia has been linked with mortality in HIV infection. The mechanism of anemia in the era of contemporary antiretroviral therapy is not understood. The aim of this study was to describe the association between anemia and markers of immune activation and inflammation in a cohort of HIV-infected adults on stable antiretroviral therapy. METHODS: We performed a cross-sectional study of HIV-infected adults on antiretroviral therapy with HIV-1 RNA < 1000 copies/ml. Soluble and cellular markers of inflammation and immune activation were measured. Relationships between hemoglobin levels, anemia (hemoglobin <13 g/dL for men and <12 g/dL for women) and mild anemia (hemoglobin <14 g/dL for men and <13 g/dL for women) and these markers were explored using multivariable linear regression. RESULTS: Among the 147 participants, median age was 46 years, 78% were men, 68% were African American and 29% were Caucasian. Median BMI was 26.7 kg/m2, nadir and current CD4+ T cell counts were 179 and 613 cells/mm3, respectively, and 78% had HIV-1 RNA <50 copies/ml (range 20-600 copies/ml). Median (IQR) hemoglobin was 14.3 (13.1-15.1) g/dl; 14% were anemic and 33% had at least mild anemia. In multivariable analyses, mild anemia was independently associated with female sex, older age, shorter duration of ART, lower WBC count, higher platelet count, higher sCD14 and a greater number of CD14dimCD16+ cells or "patrolling" monocytes, which remained significant after further adjusting for race and BMI. CONCLUSIONS: Having hemoglobin <14 g/dL for men and <13 g/dL for women was independently associated with monocyte activation (sCD14 and CD14dimCD16+ cells) in HIV-infected adults on stable antiretroviral therapy.


Human immunodeficiency virus-negative plasma-blastic lymphoma (PBL) is an extremely rare entity. Its clinicopathological features, optimal treatment strategy and prognostic factors remain obscure. An extensive search was performed in the English language literature within the Pubmed database using the key words: 'plasmablastic lymphoma and human immunodeficiency virus-negative or immunocompetent'. Data from 114 patients from 52 articles were analyzed. The mean patient age at diagnosis was 58.90 years (range, 2-86). HIV-negative PBL showed a predilection for elderly individuals (patients older than 60 years, 56.14%) and affected more males than females (M:F, 2.29:1). Ann Arbor stage IV patients accounted for 39.22% while bone marrow involvement was less frequent (12.79%). The Ki-67 index was high with a mean expression of 83%. Epstein-Barr virus (EBV) infection was common being positive in 58.70% of the patients while herpesvirus-8 (HHV-8) infection was rare being positive in only 7.55% of the patients. Immunosuppression was noted in 28.16% of patients. The median overall survival (OS) was 19 months. The 1- and 2-year survival rates were 52.3 and 45.3%, respectively. Age, gender and primary site showed no strong relationship with OS while Immunosuppression, Ann Arbor stage IV and EBV negativity were able to predict a poorer OS. Either complete remission (CR) or partial remission (PR) was superior to the refractory group in OS (P=0.0001 and P=0.0066, respectively). For stage patients, the application of radiotherapy did not improve the OS. In conclusion, HIV-negative PBL is a distinct entity likely occurring in elderly and immunosuppressed individuals. Immunosuppression
status, Ann Arbor stage IV, EBV negativity and refractory to treatment are poor prognostic factors of OS in HIV-negative PBL.


More than 30% of perinatally HIV-infected children in Thailand are 12 years and older. As these youth become sexually active, there is a risk that they will transmit HIV to their partners. Data on the knowledge, attitudes, and practices (KAP) of HIV-infected youth in Thailand are limited. Therefore, we assessed the KAP of perinatally HIV-infected youth and youth reporting sexual risk behaviors receiving care at two tertiary care hospitals in Bangkok, Thailand and living in an orphanage in Lopburi, Thailand. From October 2010 to July 2011, 197 HIV-infected youth completed an audio computer-assisted self-interview to assess their KAP regarding antiretroviral (ARV) management, reproductive health, sexual risk behaviors, and sexually transmitted infections (STIs). A majority of youth in this study correctly answered questions about HIV transmission and prevention and the importance of taking ARVs regularly. More than half of the youth in this study demonstrated a lack of family planning, reproductive health, and STI knowledge. Girls had more appropriate attitudes toward safe sex and risk behaviors than boys. Although only 5% of the youth reported that they had engaged in sexual intercourse, about a third reported sexual risk behaviors (e.g., having or kissing boy/girlfriend or consuming an alcoholic beverage). We found low condom use and other family planning practices, increasing the risk of HIV and/or STI transmission to sexual partners. Additional resources are needed to improve reproductive health knowledge and reduce risk behavior among HIV-infected youth in Thailand.


By 2015, one-half of all HIV-positive persons in the U.S. will be 50-plus years of age, and as many as 30% of older adults living with HIV/AIDS continue to engage in unprotected sexual intercourse. Contemporary positive prevention models often include mental health treatment as a key component of HIV prevention interventions. This secondary data analysis characterized longitudinal patterns of sexual behavior in HIV-positive older adults enrolled in a randomized controlled trial of group mental health interventions and assessed the efficacy of psychosocial treatments that targeted depression to reduce sexual risk behavior. Participants were 295 HIV-positive adults >/=50 years of age experiencing mild to severe depressive symptoms, randomized to one of three study conditions: a 12-session coping improvement group intervention, a 12-session interpersonal support group intervention, or individual therapy upon request. Approximately one-fifth of participants reported one or more occasions of unprotected anal or vaginal intercourse with HIV-negative sexual partners or persons of unknown HIV serostatus over the study period. Changes in sexual behavior did not vary by intervention condition, indicating that standalone treatments that target and reduce depression may be insufficient to reduce sexual risk behavior in depressed HIV-positive older adults.


Increased research-based imaging has led to an increase in clinically significant extra-cardiac findings. HIV patients are at increased risk of having polypathology at a younger age; therefore, it may be hypothesised that they would have more incidental findings on imaging. We reviewed the magnetic resonance imaging results of 169 HIV-positive and 40 HIV-negative, clinically well volunteers undergoing cardiac magnetic resonance imaging scanning to assess the prevalence of subclinical cardiac pathology.
This sub-study assessed the prevalence of clinically significant extra-cardiac findings. Associated risk factors were assessed and clinical follow-up and outcome were ascertained. Of the HIV-positive study group, 12/169 (7.1%) vs. 1/40 (2.5%) control patients had a clinically significant extra-cardiac finding which warranted further radiological or clinical intervention (p = 0.28). A total of three out of 169 (1.1%) were highly clinically significant findings. On logistic regression analysis, age was the only significant contributing factor (p = 0.049); no HIV-associated factors were found to be significant. The prevalence of clinically significant extra-cardiac findings of 7.1% in this HIV-positive cohort is comparable to the prevalence found in previous studies carried out on an older, sicker general population. This highlights the need for planning for unexpected outcomes and also the high rate of clinically significant findings in a seemingly well HIV-positive population.


Infection with the human immunodeficiency virus (HIV) causes systemic T cell destruction and reduced cell-mediated immunity that leads to a wide range of opportunistic infections and cancers. Second, it directly damages many tissues - gut, brain, lung - through mononuclear cell infection and activation. Third, through immune activation and effects on endothelia, it can cause more subtle systemic organ damage, such as chronic cardiovascular, hepatic, pulmonary and central nervous system disease. Antiretroviral treatment has enabled HIV-infected persons to live with chronic infection, although with some side-effects and mortality, including reactions due to the immune reconstitution inflammatory syndrome (IRIS). As cohorts of infected people get older, age-related diseases will combine with chronic HIV infection to produce disabilities whose scale is not yet understood. HIV is detectable in tissues by immunohistochemistry when infection loads are high, such as at first presentation. Pathologists should proactively consider HIV disease in routine diagnostic work, so as to identify more HIV-infected patients and enable their optimal management.


Despite modern combination antiretroviral therapy, distal neuropathic pain (DNP) continues to affect many individuals with HIV infection. We evaluated risk factors for new-onset DNP in the CNS Antiretroviral Therapy Effects Research (CHARTER) study, an observational cohort. Standardized, semiannual clinical evaluations were administered at 6 US sites. Distal neuropathic pain was defined by using a clinician-administered instrument standardized across sites. All participants analyzed were free of DNP at study entry. New-onset DNP was recorded at the first follow-up visit at which it was reported. Mixed-effects logistic regression was used to evaluate potential predictors including HIV disease and treatment factors, demographics, medical comorbidities, and neuropsychiatric factors. Among 493 participants, 131 (27%) reported new DNP over 2306 visits during a median follow-up of 24 months (interquartile range 12-42). In multivariable regression, after adjusting for other covariates, significant entry predictors of new DNP were older age, female sex, current and past antiretroviral treatment, lack of virologic suppression, and lifetime history of opioid use disorder. During follow-up, more severe depression symptoms conferred a significantly elevated risk. The associations with opioid use disorders and depression reinforce the view that the clinical expression of neuropathic pain with peripheral nerve disease is strongly influenced by neuropsychiatric factors. Delineating such risk factors might help target emerging preventive strategies, for example, to individuals with a history of opioid use disorder, or might lead to new treatment approaches such as the use of tools to ameliorate depressed mood.


BACKGROUND: Although high rates of alcohol consumption and related problems have been observed among HIV-infected men who have sex with men (MSM), little is known about the long-term patterns of and factors associated with hazardous alcohol use in this population. We sought to identify alcohol use trajectories and correlates of hazardous alcohol use among HIV-infected MSM. METHODS:
Sexually active, HIV-infected MSM participating in the Veterans Aging Cohort Study were eligible for inclusion. Participants were recruited from VA infectious disease clinics in Atlanta, Baltimore, New York, Houston, Los Angeles, Pittsburgh, and Washington, DC. Data from annual self-reported assessments and group-based trajectory models were used to identify distinct alcohol use trajectories over an eight-year study period (2002-2010). We then used generalized estimate equations (GEE) to examine longitudinal correlates of hazardous alcohol use (defined as an AUDIT-C score \(\geq 4\)). RESULTS: Among 1065 participants, the mean age was 45.5 (SD=9.2) and 606 (58.2%) were African American. Baseline hazardous alcohol use was reported by 309 (29.3%). Group-based trajectory modeling revealed a distinct group (12.5% of the sample) with consistently hazardous alcohol use, characterized by a mean AUDIT-C score of \(>5\) at every time point. In a GEE-based multivariable model, hazardous alcohol use was associated with earning \(<$6000\) annually, having an alcohol-related diagnosis, using cannabis, and using cocaine. CONCLUSIONS: More than 1 in 10 HIV-infected MSM US veterans reported consistent, long-term hazardous alcohol use. Financial insecurity and concurrent substance use were predictors of consistently hazardous alcohol use, and may be modifiable targets for intervention.


OBJECTIVES: Develop an empirically grounded measure that can be used to assess family and individual resilience in a population of older adults (aged 50-99). METHODS: Cross-sectional, self-report data from 1006 older adults were analyzed in two steps. The total sample was split into two subsamples and the first step identified the underlying latent structure through principal component exploratory factor analysis (EFA). The second step utilized the second half of the sample to validate the derived latent structure through confirmatory factor analysis (CFA). RESULTS: EFA produced an eight-factor structure that appeared clinically relevant for measuring the multidimensional nature of resilience. Factors included self-efficacy, access to social support network, optimism, perceived economic and social resources, spirituality and religiosity, relational accord, emotional expression and communication, and emotional regulation. CFA confirmed the eight-factor structure previously achieved with covariance between each of the factors. Based on these analyses we developed the multidimensional individual and interpersonal resilience measure, a broad assessment of resilience for older adults. CONCLUSION: This study highlights the multidimensional nature of resilience and introduces an individual and interpersonal resilience measure developed for older adults which is grounded in the individual and family resilience literature.


ABSTRACT Background: The aim of this research was to compare associations of self-perceived successful aging (SPSA) among Young-Old (Y-O; age 50-74 years) versus Old-Old (O-O; 75-99 years) community-dwelling adults. To our knowledge, this is the first study to compare respondents’ self-perceptions of successful aging among O-O relative to Y-O adults. METHODS: Participants included 365 Y-O and 641 O-O adults. The two age groups were compared in terms of the association of SPSA with other preselected measures including sociodemographic information, physical and mental functioning, objective and subjective cognitive functioning, emotional health, and positive psychological constructs. RESULTS: The O-O group reported higher levels of SPSA than the Y-O group. In multiple regression modeling examining predictors of SPSA in each group, there was a tendency toward lower associations in the O-O group overall. Most notably, the associations between physical and mental functioning with SPSA were significantly lower in the O-O versus Y-O group. There were no associations with SPSA that were significantly higher in the O-O versus Y-O group. CONCLUSION: The lower predictive power of physical and mental functioning on SPSA among O-O relative to Y-O adults is particularly noteworthy. It is apparent that SPSA is a multidimensional construct that cannot be defined by physical functioning alone. Continuing to clarify the underlying factors impacting SPSA between groups may inform tailored interventions to promote successful aging in Y-O and O-O adults.
More people are living with HIV into midlife and older age. While increased longevity brings new hope, it also raises unanticipated challenges - especially for gay men who never thought they would live into middle and older age. Middle aged and older people are more likely to face multiple morbidities, yet many lack the necessary supports to help them adapt to the challenges of aging with HIV. This paper presents the findings of a qualitative study developed to explore gay men's experience of aging with HIV. Multiple in-depth exploratory interviews were conducted with fifteen (15) gay identified men living with HIV/AIDS over an eighteen (18) month period. A systematic strategy data analysis consistent with grounded theory revealed a pattern of subtle adjustments to living with HIV that resulted in diminishing circles of social support and social involvement. This dynamic is referred to as "a shrinking kind of life," an in-vivo code built from the participant's own words. Four themes from the research (physical challenges, a magnitude of loss, internal changes, and stigma) are discussed. Conclusions include recommendations for future research and implications for practice in the field. Practitioners knowledgeable of the factors that impact their social involvement can empower gay men through individual and group interventions to confront a shrinking kind of life and define for themselves what it means to optimally age with HIV.


The reason co-morbid methamphetamine use and HIV infection lead to more rapid progression to AIDS is unclear. We used a model of methamphetamine self-administration to measure the effect of methamphetamine on the systemic immune system to better understand the co-morbidity of methamphetamine and HIV. Catheters were implanted into the jugular veins of male, Sprague Dawley rats so they could self-administer methamphetamine (n=18) or be given saline (control; n=16) for 14 days. One day after the last operant session, blood and spleens were collected. We measured serum levels of pro-inflammatory cytokines, intracellular IFN-gamma and TNF-alpha, and frequencies of CD4(+), CD8(+), CD200(+) and CD11b/c(+) lymphocytes in the spleen. Rats that self-administered methamphetamine had a lower frequency of CD4(+) T cells, but more of these cells produced IFN-gamma. Methamphetamine did not alter the frequency of TNF-alpha-producing CD4(+) T cells. Methamphetamine using rats had a higher frequency of CD8(+) T cells, but fewer of them produced TNF-alpha. CD11b/c and CD200 expression were unchanged. Serum cytokine levels of IFN-gamma, TNF-alpha and IL-6 in methamphetamine rats were unchanged. Methamphetamine lifetime dose inversely correlated with serum TNF-alpha levels. Our data suggest that methamphetamine abuse may exacerbate HIV disease progression by activating CD4 T cells, making them more susceptible to HIV infection, and contributing to their premature demise. Methamphetamine may also increase susceptibility to HIV infection, explaining why men who have sex with men (MSM) and frequently use methamphetamine are at the highest risk of HIV infection.


Prevalence of nonmedical prescription opioid (PO) use has increased markedly in the U.S. This qualitative study explores the drug-use and sexual experiences of nonmedical PO users as they relate to risk for HIV and HCV transmission. Forty-six New York City young adult nonmedical PO users (ages 18-32) completed in-depth, semi-structured interviews. Despite initial perceptions of POs as less addictive and safer than illegal drugs, PO misuse often led to long-term opioid dependence and transition to heroin.
use and drug injection. Injectors in the sample reported sporadic syringe-sharing, frequent sharing of non-syringe injection paraphernalia and selective sharing with fellow injectors who are presumed "clean" (uninfected). Participants reported little knowledge of HCV injection-related risks and safer injection practices. They also reported engaging in unprotected sex with casual partners, exchange sex and group sex, and that PO misuse increases the risk of sexual violence. Prevention efforts addressing HIV/HCV risk should be targeted to young nonmedical PO users.


Adequate engagement in HIV care is necessary for the achievement of optimal health outcomes and for the reduction of HIV transmission. Positive Charge (PC) was a national HIV linkage and re-engagement in care program implemented by AIDS United. This study describes three PC programs, the characteristics of their participants, and the continuum of engagement in care for their participants. Eighty-eight percent of participants were engaged in care post PC enrollment. Sixty-nine percent were retained in care, and 46% were virally suppressed at follow-up. Older participants were more likely to be engaged, retained, and virally suppressed. Differences by race and gender in HIV care and treatment varied across PC programs, reflecting the diverse target populations, locations, and strategies employed by the PC grantees. There is an urgent need for programs that promote HIV care and treatment among vulnerable populations, including young people living with HIV. There is also an urgent need for additional research to test the effectiveness of promising linkage and retention in care strategies, such as peer navigation.


OBJECTIVE: To investigate associations between background characteristics (psychosocial adversity, risk behaviours/perception of risk and HIV-related knowledge, perceptions and beliefs) and psychological and cognitive morbidity among people coming for testing for HIV/AIDS in Goa, India.

METHODS: Analysis of cross-sectional baseline data (plus HIV status) from a prospective cohort study. Participants were recruited at the time of coming for HIV testing. RESULTS: Consistent with associations found among general population samples, among our sample of 1934 participants, we found that indicators of psychosocial adversity were associated with CMD (common mental disorder - major depression, generalised anxiety and panic disorder) among people coming for testing for HIV. Similarly, perpetration of intimate partner violence was associated with AUD (alcohol use disorder). Two STI symptoms were associated with CMD, and sex with a non-primary partner was associated with AUD. Suboptimal knowledge about HIV transmission and prevention was associated with low cognitive test scores. In contrast with other studies, we found no evidence of any association between stigma and CMD. There was no evidence of modification of associations by HIV status. CONCLUSIONS: Among people coming for testing for HIV/AIDS in Goa, India, we found that CMD occurred in the context of social and economic stressors (violence, symptoms of STI, poor education and food insecurity) and AUD was associated with violence and risky sexual behaviour. Further research is necessary to understand the role of gender, stigma and social norms in determining the relationship between sexual and mental health. Understanding associations between these background characteristics and psychological morbidity may help inform the design of appropriate early interventions for depression among people newly diagnosed HIV/AIDS.


As black women over age 50 represent a growing share of women living with HIV, understanding what helps them persist and engage in ongoing HIV care will become increasingly important. Delineating the specific roles of social support and stigma on HIV care experiences among this population remains unclear. We qualitatively examined how experiences with stigma and social support either facilitated or
inhibited engagement in HIV care, from the perspective of older black women. Semi-structured interviews were conducted with 20 older black women currently receiving HIV care at primary care clinics in the Metropolitan Boston area. Women expressed that experiences with stigma and seeking support played an important role in evaluating the risks and benefits of engaging in care. Social support facilitated their ability to engage in care, while stigma interfered with their ability to engage in care throughout the course of their illness. Providers in particular, can facilitate engagement by understanding the changes in these women’s lives as they struggle with stigma and disclosure while engaging in HIV care. The patient’s experiences with social support and stigma and their perceptions about engagement are important considerations for medical teams to tailor efforts to engage older black women in regular HIV care.


BACKGROUND: The negative health effects of cigarette smoking and HIV infection are synergistic. OBJECTIVE: To compare the prevalence of current cigarette smoking and smoking cessation between adults with HIV receiving medical care and adults in the general population. DESIGN: Nationally representative cross-sectional surveys. SETTING: United States. PATIENTS: 4217 adults with HIV who participated in the Medical Monitoring Project and 27 731 U.S. adults who participated in the National Health Interview Survey in 2009. MEASUREMENTS: The main exposure was cigarette smoking. The outcome measures were weighted prevalence of cigarette smoking and quit ratio (ratio of former smokers to the sum of former and current smokers). RESULTS: Of the estimated 419 945 adults with HIV receiving medical care, 42.4% (95% CI, 39.7% to 45.1%) were current cigarette smokers, 20.3% (CI, 18.6% to 22.1%) were former smokers, and 37.3% (CI, 34.9% to 39.6%) had never smoked. Compared with the U.S. adult population, in which an estimated 20.6% of adults smoked cigarettes in 2009, adults with HIV were nearly twice as likely to smoke (adjusted prevalence difference, 17.0 percentage points [CI, 14.0 to 20.1 percentage points]) but were less likely to quit smoking (quit ratio, 32.4% vs. 51.7%). Among adults with HIV, factors independently associated with greater smoking prevalence were older age, non-Hispanic white or non-Hispanic black race, lower educational level, poverty, homelessness, incarceration, substance use, binge alcohol use, depression, and not achieving a suppressed HIV viral load. LIMITATION: Cross-sectional design with some generalizability limitations. CONCLUSION: Adults with HIV were more likely to smoke and less likely to quit smoking than the general adult population. Tobacco screening and cessation strategies are important considerations as part of routine HIV care.

PRIMARY FUNDING SOURCE: Centers for Disease Control and Prevention.


INTRODUCTION: Since 2000 sirtuins (SIRT1-7) have gained growing attention for their connections with many biological processes such as cellular metabolism regulation, neuroprotection, apoptosis, inflammation, and cancer progression. In particular, SIRT1 has been the most studied isoform, not only for its role during caloric restriction but also as target in prevention of aging-related diseases. SIRT inhibition can be useful for treating cancer, HIV infection or muscular diseases, SIRT activation can exert positive effects in aging-related disorders such as metabolism, cardiovascular, and neurodegenerative diseases. AREAS COVERED: This review includes the patents about sirtuin modulation released during the 2012 - 2014 period, and covers the potential therapeutic uses of known sirtuin modulators as well as new related small molecules in various disease contexts. EXPERT OPINION: The effective role of sirtuins in cancer is still controversial, because some of them seem to have tumor-suppressor as well as tumor-promoter properties. Thus, few patents describing SIRT inhibitors have been found in 2012 - 2014 period. Despite the still active debate on their role as direct or indirect activators of SIRT1, sirtuin-activating compounds are actually subjected to intense research for the ability to treat neurodegenerative diseases, metabolic disorders, inflammation, vascular system injuries, wound healing and endothelial dysfunctions. A great number of clinical trials are reported with either

Though prevalence of HIV and especially Hepatitis C is high among people who inject drugs (PWID) in New York, about a third of those who have injected for 8-15 years have avoided infection by either virus despite their long-term drug use. Based on life history interviews with 35 long-term PWID in New York, this article seeks to show how successful integration and performance of various drug using and non-drug using roles may have contributed to some of these PWID's staying uninfected with either virus. We argue that analysis of non-risk related aspects of the lives of the risk-takers (PWID) is very important in understanding their risk-taking behaviour and its outcomes (infection statuses). Drawing on work-related, social and institutional resources, our double-negative informants underwent both periods of stability and turmoil without getting infected.


Sexual abstinence is often deemed the "safest behavior" in HIV prevention, but is sometimes associated with psychological symptoms (e.g., depression) just as sexually risky behavior is. This study explored whether sexual abstinence and risky sexual behavior among men with HIV were associated with similar constellations of psychological symptoms. Prior research has not addressed this issue because abstinent people often are not included in the sample or, when data are analyzed, researchers combine abstinent people with sexually active people who practice safer sex. Past research also neglects the comorbidity of psychological symptoms. A latent class analysis of the psychological symptoms (assessed with the Symptom Check List 90-R; Derogatis, 1994) of 140 men with HIV, mostly from rural New England, revealed three latent classes: men who were asymptomatic on all symptom domains (28.8 %), men who were symptomatic on all domains (34.1 %), and men who were symptomatic on internalizing domains (37.1 %), but were asymptomatic on the externalizing symptoms of hostility and paranoid ideation. Logistic regression showed that sexual behavior during the past 90 days of men in the all symptom class and the internalizing symptoms class was similar, with abstinence and risky sex predominating, and safer sex being relatively uncommon for both classes. The sexual behavior of men in the asymptomatic class differed, with safer sex being relatively more likely to occur compared to the symptomatic classes. These findings suggest that the psychological symptom profile of sexually abstinent people places them at risk for inconsistent condom use should they engage in sexual behavior.


Objective: To examine whether latent class indicators of negative affect and substance use emerged as distinct psychosocial risk profiles among HIV-infected men, and if these latent classes were associated with high-risk sexual behaviors that may transmit HIV. Methods: Data were from HIV-infected men who reported having anal intercourse in the past 6 months and received routine clinical care at 4 U.S. sites in the Centers for AIDS Research Network of Integrated Clinical Systems cohort (n = 1,210). Latent class membership was estimated using binary indicators for anxiety, depression, alcohol and/or drug use during sex, and polydrug use. Generalized estimating equations modeled whether latent class membership was associated with HIV sexual transmission risk in the past 6 months. Results: Three latent classes of psychosocial indicators emerged: (a) internalizing (15.3%; high probability of anxiety and major depression); (b) externalizing (17.8%; high probability of alcohol and/or drug use during sex and polydrug use); (c) low psychosocial distress (67.0%; low probability of all psychosocial factors examined). Internalizing and externalizing latent class membership were associated with HIV sexual
transmission risk, compared to low psychosocial class membership; externalizing class membership was also associated with higher sexual transmission risk compared to internalizing class membership.

Conclusions: Distinct patterns of psychosocial health characterize this sexually active HIV-infected male patient population and are strongly associated with HIV sexual transmission risk. Public Health intervention efforts targeting HIV sexual risk transmission may benefit from considering symptom clusters that share internalizing or externalizing properties. (PsycINFO Database Record (c) 2015 APA, all rights reserved).


With the advent of antiretroviral therapies, persons living with HIV/AIDS (PLHIVs) are living longer but with increased impairment and care needs. The purpose of this study was to assess whether a vulnerable population of PLHIVs preferred informal versus professional care when unable to care for themselves, and individual and support network factors associated with preference for informal care. The findings have potential implications for facilitating the population's informal care at end of life. Data were from the BEACON study, which examined social factors associated with health outcomes among former or current drug-using PLHIVs in Baltimore, MD. Structural equation modeling was used to identify individual and support network characteristics associated with PLHIVs' preference for informal (family or friends) compared to professional care. The structural equation model indicated preference for informal care was associated with female sex, greater informal care receipt, reporting one's main partner (i.e., boy/girlfriend or spouse) as the primary source of informal care, and a support network comprised greater numbers of female kin and persons supportive of the participant's HIV treatment adherence. Not asking for needed help to avoid owing favors was associated with preferring professional care. Findings suggest that interventions to promote informal end of life care should bolster supportive others' resources and skills for care provision and treatment adherence support, and should address perceived norms of reciprocity. Such intervention will help ensure community caregiving in a population with high needs for long-term care.


OBJECTIVE:: The longitudinal trajectories that individuals may take from a state of normal cognition to HIV-associated dementia are unknown. We applied a novel statistical methodology to identify trajectories to cognitive impairment, and factors that affected the 'closeness' of an individual to one of the canonical trajectories. DESIGN:: The Multicenter AIDS Cohort Study (MACS) is a four-site longitudinal study of the natural and treated history of HIV disease among gay and bisexual men. METHODS:: Using data from 3892 men (both HIV-infected and HIV-uninfected) enrolled in the neuropsychology substudy of the MACS, a Mixed Membership Trajectory Model (MMTM) was applied to capture the pathways from normal cognitive function to mild impairment to severe impairment. MMTMs allow the data to identify canonical pathways and to model the effects of risk factors on an individual's 'closeness' to these trajectories. RESULTS:: First, we identified three distinct trajectories to cognitive impairment: 'normal aging' (low probability of mild impairment until age 60); 'premature aging' (mild impairment starting at age 45-50); and 'unhealthy' (mild impairment in 20s and 30s) profile. Second, clinically defined AIDS, and not simply HIV disease, was associated with closeness to the premature aging trajectory. And, third, hepatitis-C infection, depression, race, recruitment cohort and confounding conditions all affected individual's closeness to these trajectories. CONCLUSION:: These results provide new insight into the natural history of cognitive dysfunction in HIV disease and provide evidence for a potential difference in the pathophysiology of the development of cognitive impairment based on trajectories to impairment.

Diabetes mellitus (DM) is a common condition with significant associated morbidity and mortality. DM diagnosis and management among human immunodeficiency virus (HIV)-infected patients is a particularly relevant topic as the HIV-infected population ages and more HIV-infected individuals live with chronic medical comorbidities. Although there is mixed evidence regarding HIV as an independent risk factor for DM, multiple factors related to HIV and its treatment are associated with DM. This review covers the epidemiology of DM in HIV-infected patients, and diagnosis, management, and treatment goals for DM in HIV-infected patients. We highlight the most recent DM treatment guidelines from the American Diabetes Association and the European Association for the Study of Diabetes, emphasizing individualization of DM medication therapy and treatment goals. Finally, we review a comprehensive approach to cardiovascular disease risk reduction in HIV-infected patients with DM and measures to prevent other complications of DM.


OBJECTIVE: Compassion is an important contributor to pro-social behavior and maintenance of interpersonal relationships, yet little is known about what factors influence compassion in late life. The aim of this study was to test theories about how past and current stressors and emotional functioning, resilience, and demographic indicators of life experiences are related to compassion among older adults.

METHODS: One thousand and six older adults (50-99 years) completed a comprehensive survey including self-report measures of compassion, resilience, past and present stress, and emotional functioning (i.e., stressful life events, perceived stress, and current and prior depression and anxiety), and demographic information. The sample was randomly split, and exploratory and confirmatory regression analyses were conducted testing hypothesized relationships with compassion.

RESULTS: Exploratory stepwise regression analysis (n = 650) indicated that participants who reported higher levels of compassion were more likely to be female, not currently in a married/married-like relationship, reported higher resilience levels, and had experienced more significant life events. Age, income level, past and current mental distress, and interactions between resilience and other predictors were not significantly related to compassion. The associations between greater self-reported compassion and being female, having greater resilience, and having experienced more significant life events were supported by a confirmatory stepwise regression analysis (n = 356). CONCLUSIONS: Older women report more compassion than older men. Resilience and significant life events, independently, also appear to facilitate a desire to help others, while current stress and past and present emotional functioning are less relevant. Specificity of findings to older adults is not yet known.


eHealth, mHealth and "Web 2.0" social media strategies can effectively reach and engage key populations in HIV prevention across the testing, treatment, and care continuum. To assess how these tools are currently being used within the field of HIV prevention and care, we systematically reviewed recent (2013-2014) published literature, conference abstracts, and funded research. Our searches identified 23 published intervention studies and 32 funded projects underway. In this synthesis we describe the technology modes applied and the stages of the HIV care cascade addressed, including both primary and secondary prevention activities. Overall trends include use of new tools including social networking sites, provision of real-time assessment and feedback, gamification and virtual reality. While there has been increasing attention to use of technology to address the care continuum, gaps remain around linkage to care, retention in care, and initiation of antiretroviral therapy.


In South Africa young women bear a disproportionate burden of HIV infection however, risk factors for HIV acquisition are not fully understood in this setting. In a cohort of 245 women, we used
proportional hazard regression analysis to examine the association of demographic, clinical, and behavioural characteristics with HIV acquisition. The overall HIV incidence rate (IR) was 7.20 per 100 women years (wy), 95 % confidence interval (CI) 4.50-9.80. Women 18-24 years had the highest HIV incidence (IR 13.20 per 100 wy, 95 % CI 6.59-23.62) and were almost three times more likely to acquire HIV compared to women 25 years and older [adjusted Hazard Ratio (aHR) 2.61, 95 % CI 1.05-6.47]. Similarly, women in relationships with multiple sex partners had more than twice the risk of acquiring HIV when compared to women who had no partner or who had a husband or stable partner (aHR 2.47, 95 % CI 0.98-6.26). HIV prevention programmes must address young women’s vulnerability and sex partner reduction in this setting.


Depression is the most common neuropsychiatric complication in HIV-infected patients and may occur in all phases of the infection. Accurately, diagnosing major depressive disorder in the context of HIV is an ongoing challenge to clinicians and researchers, being complicated by the complex biological, psychological, and social factors associated with the HIV illness. Evidences exist to support the importance of improving the identification of depressive symptoms and their adequate treatment. Depression has long been recognized as a predictor of negative clinical outcomes in HIV-infected patients, such as reducing medication adherence, quality of life, and treatment outcome, and possibly worsening the progression of the illness and increasing mortality. By analyzing the most relevant studies (MEDLINE, EMBASE, PsycLit, Cochrane Library), the review discusses the epidemiology and the main clinical features of depression in HIV-infected patients, the causal pathways linking depression and HIV infection, the validity of screening tools, and the efficacy of different treatment approaches, including psychosocial interventions, psychopharmacology as well as HIV-specific health psychology health service models.


BACKGROUND: This was a post-hoc analysis of the Optimized Pegylated interferons Efficacy and anti-Retroviral Approach (OPERA) study, originally designed to document routine clinical and treatment data in HIV/HCV coinfected patients treated with pegylated interferon/ribavirin (PEG-IFN/RBV). The aim of this study was to define the impact of several variables, such as age, glucose metabolism, and HIV viral load, on PEG-IFN/RBV treatment outcomes, in HIV/HCV coinfected women. METHODS: Female subjects from the OPERA database were retrospectively evaluated and factors associated with sustained virological response (SVR) were assessed and compared to the male population by logistic regression analysis. At baseline, clinical and demographic data were collected. Patients were then administered with PEG-IFN/RBV therapy for 48 weeks. After a 24-week follow-up period, SVR was evaluated. RESULTS: A total of 1523 patients were enrolled in 98 centers across Italy, 1284 of whom were IFN therapy naive and were included in the post-hoc analysis. In the female group, factors associated with SVR were the presence of HCV genotype 2,3 (adjusted odds ratio [AOR]=6.87, p=0.0001), age </=45 years (AOR=2.61, p=0.014), >/=80% exposure to PEG-IFN (AOR=3.85, p=0.019) and RBV (AOR=3.94, p=0.015) therapy. Also, increased glucose plasma level negatively correlated with SVR (AOR=0.98, p=0.066). In the male population, undetectable HIV-RNA (AOR=1.47, p=0.033) but not glucose level (AOR=1.0, p=0.95) predicted SVR. CONCLUSIONS: Findings from the present study demonstrate that several factors may be predictive of SVR when pegylated interferon plus ribavirin is used (i.e., age, gender, HIV viral load and HCV genotype) that need to be carefully considered prior to therapeutic intervention, since they may hinder successful therapy. Use of PEG-IFN/RBV with novel direct antiviral agents will likely be still maintained until less expensive and effective interferon-free strategies become available.

BACKGROUND: Despite successful treatment and CD4+ T-cell recovery, HIV-infected individuals often experience a profound immune dysregulation characterized by a persistently low CD4:CD8 T-cell ratio. This residual immune dysregulation is reminiscent of the Immune Risk Phenotype (IRP) previously associated with morbidity and mortality in the uninfected elderly (>85 years). The IRP consists of laboratory markers that include: a low CD4:CD8 T-cell ratio, an expansion of CD8+CD28- T-cells and cytomegalovirus (CMV) seropositivity. Despite the significant overlap in immunological phenotypes between normal aging and HIV infection, the IRP has never been evaluated in HIV-infected individuals. In this pilot study we characterized immune changes associated with the IRP in a sample of successfully treated HIV-infected subjects. METHODS: 18 virologically suppressed HIV-infected subjects were categorized into 2 groups based on their IRP status; HIV+IRP+, (n = 8) and HIV+IRP−, (n = 10) and compared to 15 age-matched HIV uninfected IRP negative controls. All individuals were assessed for functional and phenotypic immune characteristics including: pro-inflammatory cytokine production, antigen-specific proliferation capacity, replicative senescence, T-cell differentiation and lymphocyte telomere length. RESULTS: Compared to HIV-infected subjects without an IRP, HIV+IRP+ subjects exhibited a higher frequency of TNF-alpha-producing CD8+ T-cells (p = 0.05) and a reduced proportion of CD8+ naive T-cells (p = 0.007). The IRP status was also associated with a marked up-regulation of the replicative senescence markers CD57 and KLGR1, on the surface of CD8+ T-cells (p = 0.004). Finally, HIV+IRP+ individuals had a significantly shorter mean lymphocyte telomere length than their non-IRP counterparts (p = 0.03). CONCLUSIONS: Our findings suggest that, despite similar levels of treatment-mediated viral suppression, the phenotypic and functional immune characteristics of HIV+IRP+ individuals are distinct from those observed in non-IRP individuals. The IRP appears to identify a subset of treated HIV-infected individuals with a higher degree of immune senescence.


BACKGROUND: Cigarette smoking presents a salient risk for HIV-positive populations. This study is among the first to examine smoking prevalence, nicotine dependence, and associated factors in a large sample of HIV-positive patients receiving antiretroviral therapy (ART) in Vietnam. METHODS: A cross-sectional study of 1133 HIV-positive people was conducted from January to September 2013 at 8 ART clinics in Hanoi (the capital) and Nam Dinh (a rural area). Smoking history and nicotine dependence (Fagerstrom Test of Nicotine Dependence-FTND) were assessed by participant self-report. Logistic regression and Tobit linear regression were performed to identify factors significantly associated with smoking outcomes. RESULTS: Prevalence of current, former, and never smokers in the sample was 36.1%, 9.5%, and 54.4%, respectively. The current smoking proportion was higher in males (59.7%) than females (2.6%). The mean FTND score was 3.6 (SD = 2.1). Males were more likely to currently smoke than females (OR = 23.4, 95% CI = 11.6-47.3). Individuals with problem drinking (OR = 1.8, 95% CI = 1.1-2.9) and ever drug use (OR = 3.7, 95% CI = 2.5-5.7) were more likely to be current smokers. Older age and currently feeling pain were associated with lower nicotine dependence. Conversely, receiving care in Nam Dinh, greater alcohol consumption, ever drug use, and a longer smoking duration were associated with greater nicotine dependence. CONCLUSIONS: Given the high prevalence of smoking among HIV-positive patients, smoking screening and cessation support should be offered at ART clinics in Vietnam. Risk factors (i.e., substance use) linked with smoking behavior should be considered in prevention programs.


HIV has increasingly impacted older adults regarding sero-prevalence and sero-incidence as long-term survivors of HIV/AIDS are living longer. This study examines the relationship between age and HIV-related attitudes and risk behaviors among female public housing residents in Puerto Rico. Using a self-administered survey instrument, 1,138 female public housing residents were surveyed between April and August 2006. Bivariate results showed that older women (aged 50+ years) were significantly less
likely to report HIV testing and to discuss safer sex with their most recent "steady" sex partner than women under the age of 50 years. Older women were also more likely to express anxiety associated with condoms and more barriers to using condoms. The older versus younger groups did not significantly differ regarding condom use, which was extremely low across the groups. In the past three and 12 months, older women were less likely than younger women to report having (a) multiple sex partners and; (b) oral and anal sex with their most recent steady sex partner; (c) oral sex with their most recent non-steady sex partner and, (d) engaging in sexual activity in the previous three and 12 months. Age-specific messages concerning their increased risk of HIV among other interventions would likely curtail the increase in the number of new HIV cases being reported among members of this sub-population.


Sexual health is an important part of an individual’s physical and emotional wellbeing. Sexuality and sexual wellbeing are often associated with young people and therefore the needs of the older person can be overlooked. Such discrimination is unjustifiable given that statistics show a rise in sexually transmitted infections (STIs) and new diagnoses of HIV in the older man. These worrying trends emphasise the legitimate need for nurses to address sexuality and sexual wellbeing as an essential component of health care.


OBJECTIVES: Individuals with HIV infection often have early waning of protective antibody following hepatitis B virus (HBV) vaccination. HIV viraemia at the time of vaccination may limit the durability of serum anti-HBV surface antibody (HBsAb) levels. We investigated the relationship of HIV plasma viral load (VL) and duration of HBsAb among vaccinees enrolled in the US Military HIV Natural History Study. METHODS: We included in the study participants who had no history of prior HBV infection, who had received all HBV vaccine doses after HIV diagnosis, and who had demonstrated an initial vaccine response, defined as HBsAb >/= 10 IU/L. Responders were retrospectively followed with serial HBV serology from the time of the last vaccine dose until the development of waning (HBsAb < 10 IU/L) or the last HBsAb measurement. Time to and risk for waning were evaluated with Kaplan-Meier survival methods and Cox proportional hazards models, respectively. RESULTS: A total of 186 initial vaccine responders were identified. During 570 person-years of observation, HBsAb waned in 52 of 186 participants (28%). The cumulative proportion maintaining HBsAb >/= 10 IU/L was 83% at 2 years and 56% at 5 years. Participants with an undetectable VL [hazard ratio (HR) 0.37; 95% confidence interval (CI) 0.18-0.76] or with detectable VL of < /= 10 000 copies/mL (HR 0.46; 95% CI 0.21-1.00) had reduced risk of waning. Other factors including age, number of vaccine doses, CD4 count, and receipt of highly active antiretroviral therapy (HAART) were not significantly associated with risk of waning HBsAb.

CONCLUSIONS: Undetectable or low HIV VL at the time of HBV vaccination is associated with greater durability of vaccine response in patients with HIV infection.


Background Anal cancer is a priority health issue in HIV positive men who have sex with men. Anal cancer screening may be aimed at either detecting the precursor lesion (high grade anal intraepithelial neoplasia(HGAIN)) or early anal cancer. To date no qualitative study has explored the views of HIV physicians regarding anal cancer and its screening. Methods We conducted indepth interviews with 20 HIV physicians (Infectious diseases, Immunology, Sexual health, General practice) in different settings (hospital, sexual health centres, general practice) from around Australia. Framework analysis was used to identify themes. Results HIV physicians viewed anal cancer as a significant health issue and all agreed on the importance of anal cancer screening amongst HIV positive MSM if a valid screening method was available. Barriers for utilizing anal cytology was based primarily on the theme of insufficient evidence
(e.g. no studies demonstrating reduction in mortality following screening or effective treatments for HGAIN). Barriers for utilizing DARE for early cancer detection were based on systemic factors (e.g. lack of opportunity, lack of priority, differences in HIV care practices); health provider factors (lack of evidence, difficulty discussing with patients, lack of confidence in DARE) and patient factors (perceived discomfort of DARE for patients, low anal cancer risk awareness). Physicians were willing to consider the idea of patient self-examination and partner-examination although concerns were raised regarding its reliability and issues surrounding partner dynamics. Conclusions HIV physicians remain ambivalent regarding the most effective means to screen for anal cancer. More research is needed to address the physicians inverted question mark concerns before anal cancer screening can be implemented into routine HIV care.


Human immunodeficiency virus (HIV) and sickle cell disease (SCD) are regarded as endemic in overlapping geographic areas; however, for most countries only scarce data on the interaction between HIV and SCD and disease burden exist. HIV prevalence in SCD patients varies between 0% and 11.5% in published studies. SCD has been suggested to reduce disease progression of HIV into AIDS. Various interactions of antiretroviral therapy with SCD exist. Both SCD and HIV act as common risk factors for stroke, avascular necrosis, severe splenic dysfunction, pulmonary arterial hypertension, and sepsis, which may result in synergistic increase in risk of developing these diseases. No treatment guidelines regarding SCD with HIV coinfection were identified. Available evidence is mainly based on small clinical studies, thus making strong recommendations difficult. An increased effort to elucidate the precise interactions is warranted to better understand both diseases and effect more adequate treatment approaches, especially in view of their geographical coprevalence.


In the last four decades, we have witnessed vast and important transitions in the social, economic, political, and health contexts of the lived experiences of gay men in the United States. This dynamic period, as evidenced most prominently by the transition of the gay rights movement to a civil rights movement, has shifted the exploration of gay men’s health from one focusing primarily on HIV/AIDS into a mainstream consideration of the overall health and wellbeing of gay men. Against this backdrop, aging gay men in the United States constitute a growing population, for whom further investigations of health states and health-related disparities are warranted. In order to advance our understanding of the health and wellbeing of aging gay men, we outline here a multilevel, ecocultural conceptual framework that integrates salient environmental, social, psychosocial, and sociodemographic factors into sets of macro-, meso-, and micro-level constructs that can be applied to comprehensively study health states and health care utilization in older gay men.


The aim was to analyze clinical complications in HIV-infected subjects who persistently maintain low CD4 levels despite virological response to cART in the Spanish CoRIS cohort. The main inclusion criteria were CD4 counts <200 cells/mm3 at cART-initiation and at least 2 years under cART achieving a viral load <500 copies/mL. Those patients with CD4 counts <250 cells/mm3 2 years after cART were classified as the Low-CD4 group, and clinical events were collected from this time-point. Poisson regression models were used to calculate incidence rate ratios of death, AIDS-defining events, serious non-AIDS-defining events (NAE) and of each specific NAE category (non-AIDS-defining malignancies (non-ADM), cardiovascular, kidney- and liver-related events). Of 9667 patients in the cohort, a total of 1128 met the criteria and 287 (25.4%) were classified in the Low-CD4 group. A higher risk of death (aIRR: 4.71; 95% CI: 1.88-11.82; p-value=0.001) and of non-ADM were observed in this group (aIRR: 2.23; 95% CI: 1.07-4.63; p=0.03). Our results stress the need to control accelerated aging in this
were tested for HPV16 using Linear Array and INNO-LiPA detection methods. Persistence was evaluated for HPV16 in Men (HIM) Study. Twenty-three oral HPV16-positive men who provided an oral gargle sample on >/=2 study visits were included in the analysis. Archived oral samples from all follow-up visits were tested for HPV16 using Linear Array and INNO-LiPA detection methods. Persistence was evaluated among 1,626 participants of the HPV Infection in Men (HIM) Study. We assessed the association between HIV and incident AMI within CVDRF strata. METHODS: Cohort-81,322 participants (33% HIV+) without prevalent CVD from the Veterans Aging Cohort Study Virtual Cohort (prospective study of HIV+ and matched HIV- veterans) participated in this study. Veterans were followed from first clinical encounter on/after April 1, 2003, until AMI/death/last follow-up date (December 31, 2009). Predictors-HIV, CVDRFs (total cholesterol, cholesterol-lowering agents, blood pressure, blood pressure medication, smoking, diabetes) used to create 6 mutually exclusive profiles: all CVDRFs optimal, 1+ nonoptimal CVDRFs, 1+ elevated CVDRFs, and 1, 2, 3+ major CVDRFs. Outcome-Incident AMI [defined using enzyme, electrocardiogram (EKG) clinical data, 410 inpatient ICD-9 (Medicare), and/or death certificates]. Statistics-Cox models adjusted for demographics, comorbidity, and substance use. RESULTS: Of note, 858 AMIs (42% HIV+) occurred over 5.9 years (median). Prevalence of optimal cardiac health was <2%. Optimal CVDRF profile was associated with the lowest adjusted AMI rates. Compared with HIV- veterans, AMI rates among HIV+ veterans with similar CVDRF profiles were higher. Compared with HIV- veterans without major CVDRFs, HIV+ veterans without major CVDRFs had a 2-fold increased risk of AMI (HR: 2.0; 95% confidence interval: 1.0 to 3.9; P = 0.044). CONCLUSIONS: The prevalence of optimal cardiac health is low in this cohort. Among those without major CVDRFs, HIV+ veterans have twice the AMI risk. Compared with HIV- veterans with high CVDRF burden, AMI rates were still higher in HIV+ veterans. Preventing/reducing CVDRF burden may reduce excess AMI risk among HIV+ people.


Antiretroviral therapy (ART) became more widely available in the Russian Federation in 2006 when the Global Fund made a contribution to purchase ART with a mandate to increase numbers of patients receiving it. Funds were distributed to AIDS Centers and selected hospitals, and numbers quickly increased. Though ART is highly effective for adherent patients, dropout has been a problem; thus understanding characteristics of patients who remain on ART vs. those who leave treatment may provide information to facilitate engagement. We retrospectively assessed depression, hopelessness, substance use, viral load, and CD4+ counts of 120 patients who dropped out of ART for >/=12 months (Lost-to-Care, LTCs) and 120 who continued for >/=12 months (Engaged-in-Care, EICs). As expected, LTCs had higher viral loads and depression, lower CD4+ counts, more alcohol, heroin, and injection drug use in the past 30 days. A binary logistic regression with Center for Epidemiologic Studies Depression score, Beck Hopelessness score, whether drugs/alcohol had ever prevented them from taking ART, and past 30 days' alcohol use [chi(2)(4) = 64.27, p = .0000] correctly classified 74.5% of participants as LTC or EIC, suggesting that integrated treatment for substance use, psychiatric, and HIV could reduce dropout and improve outcomes.


Persistent infection with oral HPV16 is believed to drive the development of most oropharyngeal cancers. However, patterns of oral HPV16 persistence remain understudied, particularly among HIV-negative individuals. Oral HPV16 persistence was evaluated among 1,626 participants of the HPV Infection in Men (HIM) Study. Twenty-three oral HPV16-positive men who provided an oral gargle sample on >/=2 study visits were included in the analysis. Archived oral samples from all follow-up visits were tested for HPV16 using Linear Array and INNO-LiPA detection methods. Persistence was evaluated
using consecutive HPV16-positive visits held approximately 6 months apart and using the Kaplan-Meier method. Oral HPV16-positive men were aged 18 to 64 years [median, 36 years; interquartile range (IQR), 25-42] and were followed for a median of 44.4 months (IQR, 29.9-49.5). Of 13 incident infections, 4 (30.8%) persisted >/=12 months, 1 (10.0%) persisted >/=24 months, and none persisted >/=36 months [median infection duration, 7.3 months; 95% confidence interval (CI), 6.4-NA]. Of 10 prevalent infections, 9 (90.0%) persisted >/=12 months, 8 (80.0%) persisted >/=24 months, 4 (57.1%) persisted >/=36 months, and 2 (40.0%) persisted >/=48 months (median infection duration, NA). Twelve-month persistence of incident infections increased significantly with age (P_trend = 0.028). Prevalent oral HPV16 infections in men persisted longer than newly acquired infections, and persistence appeared to increase with age. These findings may explain the high prevalence of oral HPV observed at older ages. Understanding oral HPV16 persistence will aid in the identification of men at high-risk of developing HPV-related oropharyngeal cancer. Cancer Prev Res; 8(3): 190-6. (c)2015 AACR.


BACKGROUND: Understanding the factors associated with HIV drug resistance development and subsequent mortality is important to improve clinical patient management. METHODS: Analysis of individual electronic health records from 4 HIV programs in Malawi, Kenya, Uganda, and Cambodia, linked to data from 5 cross-sectional virological studies conducted among patients receiving first-line antiretroviral therapy (ART) for >/=6 months. Adjusted logistic and Cox-regression models were used to identify risk factors for drug resistance and subsequent mortality. RESULTS: A total of 2257 patients (62% women) were included. At ART initiation, median CD4 cell count was 100 cells per microliter (interquartile range, 160-4800). A median of 25.1 months after therapy start, 18% of patients had >/=400 and 12.4% >/=1000 HIV RNA copies per milliliter. Of 180 patients with drug resistance data, 83.9% had major resistance(s) to nucleoside or non-nucleoside reverse transcriptase inhibitors, and 74.4% dual resistance. Resistance to nevirapine, lamivudine, and efavirenz was common, and 6% had etravirine cross-resistance. Risk factors for resistance were young age (<35 years), low CD4 cell count (<200 cells/μL), and poor treatment adherence. During 4978 person-years of follow-up after virological testing (median = 31.8 months), 57 deaths occurred [rate = 1.14/100 person-years; 95% confidence interval (CI): 0.88 to 1.48]. Mortality was higher in patients with resistance (hazard ratio = 2.08; 95% CI: 1.07 to 4.07 vs. <400 copies/mL), and older age (hazard ratio = 2.41; 95% CI: 1.24 to 4.71 for >/=43 vs. </=34 years), and lower in those receiving ART for >/=30 months. CONCLUSIONS: Our findings underline the importance of optimal treatment adherence and adequate virological response monitoring and emphasize the need for resistance surveillance initiatives even in HIV programs achieving high virological suppression rates.


OBJECTIVE: We investigated the psychosocial predictors and HIV-related behaviors of old adults versus late middle-aged and younger adults. METHOD: A demographically representative sample of residents in Italy aged 18 to 75 years (n = 2,018) was subdivided into three age groups: (a) younger adults (18-49 years), (b) late middle-aged adults (50-59 years), and (c) old adults (60-75 years). Interviews were conducted using computer-assisted telephone survey methodology. RESULTS: Despite reporting similar levels of sexual risk behaviors, late middle-aged and old adults were less likely to use condoms and to have ever had an HIV test. The levels of HIV/AIDS knowledge, risk perception, perceived behavioral control, and behavioral intentions toward condom use were lower among old adults compared with younger adults. Old adults were less likely to have discussed HIV/AIDS with friends, relatives, or health professionals. DISCUSSION: Old adults should be included in prevention efforts targeting knowledge, perceptions, and intentions toward condom use. Future studies should be cautious when overgeneralizing the results to all individuals aged 50 and older.
Studies have suggested CD8 lymphocytes may be a possible marker for inflammation, which is believed to be a contributing factor to neurocognitive impairment. Individuals enrolled in the MSM...
Neurocog Study were analysed. Those with depression, anxiety or mood disorders were excluded. Individuals with neurocognitive impairment were identified using the Brief NeuroCognitive Screen and compared to those with normal scores. CD4 and CD8 T cell values and CD4:CD8 ratios were compared between groups. In all, 144 men, aged 18-50 years, were included in the analysis. Twenty were diagnosed with neurocognitive impairment. We were unable to identify any significant difference between current, nadir or peak CD4 and CD8 counts. CD4:CD8 ratios and CD4:CD8 ratio inversion (<1) were also found to be similar between both groups. However, neurocognitive impairment subjects were 8% more likely to have inversion of CD4:CD8 ratio and higher median peak CD8 cell counts reported compared to non-impaired subjects. Analysis of data from the MSM Neurocog Study, demonstrated trends in peripheral CD8 counts and CD4:CD8 ratios. However, we are unable to demonstrate any significant benefit. Plasma biomarkers of neurocognitive impairment in HIV-infected subjects would be of great benefit over current methods of invasive CSF analysis and technical neuroimaging used in the diagnosis of neurocognitive impairment. Future, prospective, longitudinal work with large numbers of neurocognitive impairment subjects is required to further investigate the role of peripheral CD8 T cells as markers of neurocognitive impairment.


BACKGROUND: polypharmacy is an important risk factor for falls, but recent studies suggest only when including medications associated with increasing the risk of falls. DESIGN: a prospective, population-based cohort study. SUBJECTS: 6,666 adults aged >/=50 years from The Irish Longitudinal study on Ageing. METHODS: participants reported regular medication use at baseline. Any subsequent falls, any injurious falls and the number of falls were reported 2 years later. The association between polypharmacy (>4 medications) or fall risk-increasing medications and subsequent falls or injurious falls was assessed using modified Poisson regression. The association with the number of falls was assessed using negative binomial regression. RESULTS: during follow-up, 231 falls per 1,000 person-years were reported. Polypharmacy including antidepressants was associated with a greater risk of any fall (adjusted relative risk (aRR) 1.28, 95% CI 1.06-1.54), of injurious falls (aRR 1.51, 95% CI 1.10-2.07) and a greater number of falls (adjusted incident rate ratio (aIRR) 1.60, 95% CI 1.19-2.15), but antidepressant use without polypharmacy and polypharmacy without antidepressants were not. The use of benzodiazepines was associated with injurious falls when coupled with polypharmacy (aRR 1.40, 95% CI 1.04-1.87), but was associated with a greater number of falls (aIRR 1.32, 95% CI 1.05-1.65), independent of polypharmacy. Other medications assessed, including antihypertensives, diuretics and antipsychotics, were not associated with outcomes. CONCLUSION: in middle-aged and older adults, polypharmacy, including antidepressant or benzodiazepine use, was associated with injurious falls and a greater number of falls.


Patients with treated HIV-1-infection experience earlier occurrence of aging-associated diseases, raising speculation that HIV-1-infection, or antiretroviral treatment, may accelerate aging. We recently described an age-related co-methylation module comprised of hundreds of CpGs; however, it is unknown whether aging and HIV-1-infection exert negative health effects through similar, or disparate, mechanisms. We investigated whether HIV-1-infection would induce age-associated methylation changes. We evaluated DNA methylation levels at >450,000 CpG sites in peripheral blood mononuclear cells (PBMC) of young (20-35) and older (36-56) infected and uninfected samples for a total of 96 samples. The effects of age and HIV-1 infection on methylation at each CpG revealed a strong correlation of 0.49, p<1 x10-200 and 0.47, p<1x10-200. Weighted gene correlation network analysis (WGCNA) identified 17 co-methylation modules; module 3 (ME3) was significantly correlated with age (cor=0.70) and HIV-1 status (cor=0.31). Older HIV-1+ individuals had a greater number of
hypemethylated CpGs across ME3 (p=0.015). In a multivariate model, ME3 was significantly associated with age and HIV status (Data set 1: betaage= 0.007088, p=2.08 x 10^-9; betaHIV= 0.099574, p=0.0011; Data set 2: betaage= 0.008762, p=1.27x10^-5; betaHIV= 0.128649, p= 0.0001). Using this model, we estimate that HIV-1 infection accelerates age-related methylation by approximately 13.7 years in data set 1 and 14.7 years in data set 2. The genes related to CpGs in ME3 are enriched for polycomb group target genes known to be involved in cell renewal and aging. The overlap between ME3 and an aging methylation module found in solid tissues is also highly significant (Fisher-exact p=5.6 x 10^-6, odds ratio=1.91). These data demonstrate that HIV-1 infection is associated with methylation patterns that are similar to age-associated patterns and suggest that general aging and HIV-1 related aging work through some common cellular and molecular mechanisms. These results are an important first step for finding potential therapeutic targets and novel clinical approaches to mitigate the detrimental effects of both HIV-1-infection and aging.


Editorial Commentary


OBJECTIVES: Sustained optimal use of combination antiretroviral therapy (cART) has been shown to decrease morbidity, mortality and HIV transmission. However, incomplete adherence and treatment interruption (TI) remain challenges to the full realization of the promise of cART. We estimated trends and predictors of treatment interruption and resumption among individuals in the Canadian Observational Cohort (CANOC) collaboration. METHODS: cART-naive individuals >/= 18 years of age who initiated cART between 2000 and 2011 were included in the study. We defined TIs as >/= 90 consecutive days off cART. We used descriptive analyses to study TI trends over time and Cox regression to identify factors predicting time to first TI and time to treatment resumption after a first TI. RESULTS: A total of 7633 participants were eligible for inclusion in the study, of whom 1860 (24.5%) experienced a TI. The prevalence of TI in the first calendar year of cART decreased by half over the study period. Our analyses highlighted a higher risk of TI among women [adjusted hazard ratio (aHR) 1.59; 95% confidence interval (CI) 1.33-1.92], younger individuals (aHR 1.27; 95% CI 1.15-1.37 per decade increase), earlier treatment initiators (CD4 count >/= 350 vs. <200 cells/μL: aHR 1.46; 95% CI 1.17-1.81), Aboriginal participants (aHR 1.67; 95% CI 1.27-2.20), injecting drug users (aHR 1.43; 95% CI 1.09-1.89) and users of zidovudine vs. tenofovir in the initial cART regimen (aHR 2.47; 95% CI 1.92-3.20). Conversely, factors predicting treatment resumption were male sex, older age, and a CD4 cell count <200 cells/μL at cART initiation. CONCLUSIONS: Despite significant improvements in cART since its advent, our results demonstrate that TIs remain relatively prevalent. Strategies to support continuous HIV treatment are needed to maximize the benefits of cART.


OBJECTIVE: We tested our hypothesis that abdominal obesity when associated with increased levels of systemic and central nervous system immunoinflammatory mediators contributes to neurocognitive impairment (NCI). DESIGN: Cross-sectional. SETTING: Six Academic Centers. PARTICIPANTS: One hundred fifty-two patients with plasma HIV RNA <1000 copies per milliliter had clinical evaluations and cognitive function quantified by global deficit scores (GDS). OUTCOME MEASURES: GDS, waist circumference (WC) and plasma IL-6, sCD163, and sCD14 and CSF sCD40L, sTNFRII, MCP-1, sICAM, and MMP-9. RESULTS: WC and plasma IL-6 levels positively correlated with GDS; the WC correlation was strongest in the high tertile of IL-6 (rho = 0.39, P = 0.005). IL-6 correlated with GDS only if WC was >/=99 cm. In the high tertile of CSF sCD40L, a biomarker of macrophage and
microglial activation, the correlation of IL-6 to GDS was strongest (rho = 0.60, P < 0.0001). Across 3-5 visits within +/-1 year of the index visit, GDS remained worse in patients with IL-6 levels in the high versus low tertile (P = 0.02). Path analysis to explore potential mediators of NCI produced a strong integrated model for patients in the high CSF sCD40L tertile. In this model, WC affected GDS both directly and through a second path that was mediated by IL-6. Inclusion of plasma sCD14 levels strengthened the model. NCI was more common in men and for individuals with components of the metabolic syndrome.

CONCLUSIONS: Neurocognitive function was significantly linked to abdominal obesity, systemic inflammation (high IL-6), and immune activation in plasma (high sCD14) and CSF (high sCD40L). Abdominal obesity, inflammation, and central nervous system immune activation are potential therapeutic targets for NCI in HIV-positive patients.


PROBLEM: Effects of HIV infection on ovarian function and aging are unclear. METHOD OF STUDY: Anti-Mullerian Hormone (AMH) levels were analyzed in 2621 HIV-infected and 941 uninfected participants using left-censored longitudinal models. RESULTS: Age-adjusted AMH levels were 16% lower in women with undetectable viraemia and 26% lower in detectable viraemia, relative to uninfected women. Current CD4 count associated with higher AMH in both HIV-infected and HIV-uninfected women. After controlling for current and nadir CD4, AMH was ~15% higher in HIV-infected relative to uninfected women, regardless of HIV viraemia. Gravidity, amenorrhea, and nadir total lymphocyte counts associated with higher AMH; hormonal contraceptive use and past weight loss associated with lower AMH.

CONCLUSIONS: CD4 + lymphocyte counts were associated with AMH in both HIV-infected and uninfected women. After adjustment for CD4 counts and age, HIV infection was associated with higher AMH. CD4 T cells and cellular activation may influence ovarian granulosa cell function.


BACKGROUND: Chronic kidney disease (CKD) is an important comorbidity during human immunodeficiency virus (HIV) infection. Historically, HIV-associated nephropathy has been the predominant cause of CKD and has primarily been observed in people of African ancestry. This study aims to investigate the role of ethnicity in relation to CKD risk in recent years. METHODS: Analyses were performed including 16 836 participants from the Dutch AIDS Therapy Evaluation in the Netherlands (ATHENA) cohort. Baseline was defined as the first available creatinine level measurement after 1 January 2007; CKD was defined as a glomerular filtration rate of <60 mL/min/1.73 m2. The associations between ethnicity and both prevalent CKD at baseline and incident CKD during follow-up were analyzed. RESULTS: The prevalence of baseline CKD was 2.7% (460 of 16 836 patients). Birth in a sub-Saharan African country (hereafter, "SSA origin") was significantly associated with baseline CKD (adjusted odds ratio 1.49; 95% confidence interval [CI], 1.04-2.13). During follow-up (median duration, 4.7 years; interquartile range, 2.4-5.2), the rate of incident CKD was 6.0 events per 1000 person-years. The risk of newly developing CKD was similar between patients of SSA origin and those born in Western Europe, Australia, or New Zealand (adjusted hazard ratio, 1.00; 95% CI, .63-1.59). CONCLUSIONS: Among HIV-infected patients in the Netherlands, being of SSA origin was associated with a higher baseline CKD prevalence but had no impact on newly developing CKD over time. This suggests a shift in the etiology of CKD from HIV-associated nephropathy toward other etiologies.


Efficacy and safety of recombinant yeast-derived hepatitis B vaccines for prevention of hepatitis B have been demonstrated unequivocally worldwide as reflected in reduction in HBsAg carrier rates and hepatocellular carcinoma. A new generation of recombinant HBV vaccines expressed in mammalian cells...
containing Pre-S/S epitopes has been developed in several countries. Such vaccines are useful in special risk groups, i.e., in non-responders to conventional HBV vaccines including older adults, obese people, health care workers, patients with renal failure and on dialysis, transplant patients, patients with HIV as well as travelers on short notice to HBV endemic regions. The future of such vaccines depends on their enhanced immunogenicity and cost profile. Sci-B-Vac is a mammalian cell-derived recombinant Pre-S1/Pre-S2/S hepatitis B vaccine which has been shown to be highly immunogenic, inducing faster and higher seroprotection rates against HBV with higher anti-HBs levels at lower HBsAg doses as compared to conventional yeast-derived vaccines. Recently, it has been suggested that such Pre-S/S vaccines against HBV might be efficacious not only for prevention but also for intervention in persistent HBV infection. Data obtained in a recent clinical trial conducted in Vietnam in patients with chronic hepatitis B suggest that repeated monthly i.m. injections of the Sci-B-Vac co-administered with daily oral lamivudine treatment can suppress HBV replication and lead to anti-HBs seroconversion in ~50% of treated patients. Optimization of protocols and efficacy of such an intervention, intended to bypass T cell exhaustion and immune tolerance to HBV remains to be explored.


Older HIV-infected gay men may experience multiple forms of stigma related to sexual orientation (homonegativity), HIV (HIV stigma), and age (ageism), all of which can negatively impact quality of life (QOL). Our purpose was to determine predictors of homonegativity, internalized HIV stigma, and ageism, and stigma experiences that were predictive of QOL. Sixty HIV-infected gay men, ages 50-65 years, participated. Younger age and emotion-focused coping were significantly predictive of homonegativity, accounting for 28% of variance. Younger age, support group participation, medications per day, social support, and emotion-focused coping predicted internalized HIV stigma, accounting for 35% of variance. Problem-focused coping predicted ageism, accounting for 7% of variance. In regression analysis, the three types of stigma accounted for 39% of variance in QOL (homonegativity 19%, internalized HIV stigma 19%, ageism 0.5%). Study findings may help researchers develop interventions to alleviate multiple stigma experiences of HIV-infected older gay men, thus improving QOL.


Combination antiretroviral therapy can suppress human immunodeficiency virus (HIV) infection but cannot completely eradicate the virus. A major obstacle in the quest for a cure is the difficulty in targeting and measuring latently infected cells. To date, a single person seems to have been cured of HIV. Hematopoietic stem cell transplantation (HSCT) preceded this cancer patient’s long-term sustained HIV remission, but researchers have been unable to replicate this cure, and the mechanisms that led to HIV remission remain to be established. In February 2014, the National Institute of Allergy and Infectious Diseases sponsored a workshop that provided a venue for in-depth discussion of whether HSCT could be exploited to cure HIV in cancer patients requiring such procedures. Participants also discussed how HSCT might be applied to a broader community of HIV-infected persons in whom the risks of HSCT currently outweigh the likelihood and benefits of HIV cure.


BACKGROUND: Human immunodeficiency virus (HIV) is a major public health concern in the United States, particularly among older Black women who comprise approximately 40% of the newly diagnosed cases among women. This systematic review sought to answer the research question: What are the sexual practices in older Black women associated with HIV risk? METHODS: CINAHL, PubMed, MEDLINE, and Web of Knowledge electronic databases were searched for English-language research studies published between 2003 and 2013 that focused on the HIV sexual risk practices of Black women over the age of 50. Using PRISMA guidelines, two reviewers independently reviewed and appraised the
quality of relevant articles; agreement of select studies was achieved by consensus. RESULTS: Among the 3,167 articles surveyed, 9 met inclusion criteria. The majority (88%) were quantitative, observational studies. All nine articles addressed at least one of three factors that contribute to HIV sexual risk: Behavioral (inconsistent condom use and multiple sexual partners), psychological (risk perception, depression/stress, trauma, and self-esteem issues), and social factors (economics, education, and drugs/alcohol use). Outcome measures varied across studies. CONCLUSION: Although this systematic review appraised few studies, findings suggest that many older Black women are engaged in HIV risk-taking practices. Clinicians and researchers need to be aware of the HIV risk practices of older Black women to improve health outcomes through education, effective communication and risk appraisal.


OBJECTIVES: We investigated whether eventual causes of death among a cohort of inmates imprisoned in the southeastern United States differed from those in previous prisoner studies. METHODS: We matched 23,510 prisoners in Georgia, a state with historically low levels of heroin consumption but moderate amounts of injection drug use, who were incarcerated on June 30, 1991, to death registries through 2010. Main exposure was 4-year time intervals over 2 decades of observation; main outcome was mortality from liver disease, HIV, and overdose. RESULTS: Although the HIV-related mortality rate exceeded that from liver-related conditions before 2003, liver disease subsequently surpassed HIV as a cause of death. Among 3863 deaths, 22 (0.6%) occurred within 2 weeks after release from prison. Of these, only 2 were caused by accidental poisoning (likely drug overdose). Cardiovascular disease and cancer were the most frequent causes of death in this aging cohort. CONCLUSIONS: Our study design deemphasized immediate deaths but highlighted long-term sequelae of exposure to viral hepatitis and alcohol. Treating hepatitis C and implementing interventions to manage alcohol use disorders may improve survival among prisoners in the Southeast. (Am J Public Health. Published online ahead of print March 19, 2015: e1-e7. doi:10.2105/AJPH.2014.302546).


Compartmentalized HIV-1 replication within the central nervous system (CNS) likely provides a foundation for neurocognitive impairment and a potentially important tissue reservoir. The timing of emergence and character of this local CNS replication has not been defined in a population of subjects. We examined the frequency of elevated cerebrospinal fluid (CSF) HIV-1 RNA concentration, the nature of CSF viral populations compared to the blood, and the presence of a cellular inflammatory response (with the potential to bring infected cells into the CNS) using paired CSF and blood samples obtained over the first two years of infection from 72 ART-naive subjects. Using single genome amplification (SGA) and phylogenetics analysis of full-length env sequences, we compared CSF and blood viral populations in 33 of the 72 subjects. Independent HIV-1 replication in the CNS (compartmentalization) was detected in 20% of sample pairs analyzed by SGA, or 7% of all sample pairs, and was exclusively observed after four months of infection. In subjects with longitudinal sampling, 30% showed evidence of CNS viral replication or pleocytosis/inflammation in at least one time point, and in approximately 16% of subjects we observed evolving CSF/CNS compartmentalized viral replication and/or a marked CSF inflammatory response at multiple time points suggesting an ongoing or recurrent impact of the infection in the CNS. Two subjects had one of two transmitted lineages (or their recombinant) largely sequestered within the CNS shortly after transmission, indicating an additional mechanism for establishing early CNS replication. Transmitted variants were R5 T cell-tropic. Overall, examination of the relationships between CSF viral populations, blood and CSF HIV-1 RNA concentrations, and inflammatory responses suggested four distinct states of viral population dynamics, with associated mechanisms of local viral replication and the early influx of virus into the CNS. This study considerably enhances the generalizability of our results and greatly expands our knowledge of the early interactions of HIV-1 in the CNS.

The combined epidemics of substance abuse, violence, and HIV/AIDS, known as the SAVA syndemic, contribute to the disproportionate burden of disease among people of color in the US. To examine the association between HIV viral load suppression and SAVA syndemic variables, we used baseline data from 563 HIV+ women of color treated at nine HIV medical and ancillary care sites participating in HRSA’s Special Project of National Significance Women of Color (WOC) Initiative. Just under half the women (n=260) were virally suppressed. Five psychosocial factors contributing to the SAVA syndemic were examined in this study: substance abuse, binge drinking, intimate partner violence, poor mental health, and sexual risk taking. Associations among the psychosocial factors were assessed and clustering confirmed. A SAVA score was created by summing the dichotomous (present/absent) psychosocial measures. Using generalized estimating equation (GEE) models to account for site-level clustering and individual-covariates, a higher SAVA score (0 to 5) was associated with reduced viral suppression; OR (adjusted)=0.81, 95% CI: 0.66, 0.99. The syndemic approach represents a viable framework for understanding viral suppression among HIV positive WOC, and suggests the need for comprehensive interventions that address the social/environmental contexts of patients’ lives.


Patient navigation, a patient-centered model of care coordination focused on reducing barriers to care, is an emerging strategy for linking patients to and retaining them in HIV care. The Guide to Healing Program (G2H), implemented at the Infectious Diseases Clinic at UNC Chapel Hill, provided patient navigation to women of color (WOC) new to or re-engaging in HIV care through a 'nurse guide' with mental health training and experience. The purpose of this study was to qualitatively explore patients’ experiences working with the nurse guide. Twenty-one semi-structured telephone interviews with G2H participants were conducted. Interviews were transcribed and thematic analysis was utilized to identify patterns and themes in the data. Women’s experiences with the nurse guide were overwhelmingly positive. They described the nurse guide teaching them critical information and skills, facilitating access to resources, and conveying authentic kindness and concern. The findings suggest that a properly trained nurse in this role can provide critical medical and psychosocial support in order to eliminate barriers to engagement in HIV care, and successfully facilitate patient HIV self-management. The nurse guide model represents a promising approach to patient navigation for WOC living with HIV.


BACKGROUND: Although numerous studies have shown that severe to moderate wasting at the time of antiretroviral therapy initiation is strongly predictive of mortality, it remains unclear whether nutritional interventions at or before antiretroviral therapy initiation will improve outcomes. This review examines data on nutrition assessment, counseling, and support interventions in resource-limited settings. METHODS: We identified articles published between 2005 and 2014 on the effectiveness of nutrition assessment, counseling, and support interventions, particularly its impact on 5 outcomes: mortality, morbidity, retention in care, quality of life, and/or prevention of ongoing HIV transmission. We rated the overall quality of individual articles and summarized the body of evidence and expected impact for each outcome. RESULTS: Twenty-one articles met all inclusion criteria. The overall quality of evidence was weak, predominantly because of few studies being designed to directly address the question of interest. Only 2 studies were randomized trials with no food support control groups. The remainder were randomized studies of one type of food support versus another, cohort (nonrandomized) studies, or single-arm studies. Ratings of individual study quality ranged from "medium" to "weak," and the quality of the overall body of evidence ranged from "fair" to "poor." We rated the expected impact on all
outcomes as "uncertain." CONCLUSIONS: Rigorous better designed studies in resource-limited settings are urgently needed to understand the effectiveness of nutrition assessment and counseling alone, as well as studies to understand better modalities of food support (targeting, timing, composition, form, and duration) to improve both short- and long-term patient retention in care and treatment, and clinical outcomes.


Graph theory models can produce simple, biologically informative metrics of the topology of resting-state functional connectivity (FC) networks. However, typical graph theory approaches model FC relationships between regions (nodes) as unweighted edges, complicating their interpretability in studies of disease or aging. We extended existing techniques and constructed fully connected weighted graphs for groups of age-matched human immunodeficiency virus (HIV) positive (n = 67) and HIV negative (n = 77) individuals. We compared test-retest reliability of weighted versus unweighted metrics in an independent study of healthy individuals (n = 22) and found weighted measures to be more stable. We quantified 2 measures of node centrality (closeness centrality and eigenvector centrality) to capture the relative importance of individual nodes. We also quantified 1 measure of graph entropy (diversity) to measure the variability in connection strength (edge weights) at each node. HIV was primarily associated with differences in measures of centrality, and age was primarily associated with differences in diversity. HIV and age were associated with divergent measures when evaluated at the whole graph level, within individual functional networks, and at the level of individual nodes. Graph models may allow us to distinguish previously indistinguishable effects related to HIV and age on FC.


AIMS AND OBJECTIVES: To examine the frequency of human immunodeficiency virus testing and sexually transmitted infection testing among older adults (50 years and older), present factors related to human immunodeficiency virus and sexually transmitted infection testing among older adults, and summarise the perspectives and practices of older adults and health care providers related to sexual health communication. BACKGROUND: Reported cases of sexually transmitted infections and human immunodeficiency virus among older adults have increased, therefore refuting the stereotype of the sexually inactive older adult. DESIGN: Integrative review. METHODS: Database searches in PubMed, EMBASE, CINAHL, and Web of Science; manual reference list searches; and database searches for articles that cited previously identified articles. RESULTS: There is limited research on this topic and considerable diversity in the populations studied and outcomes measured. The search process yielded 20 articles meeting the eligibility criteria. Human immunodeficiency virus and sexually transmitted infection testing of older adults are infrequent. Human immunodeficiency virus testing among older adults is associated with perceived risk of contracting human immunodeficiency virus and influenced by encouragement from health care providers. Sexually transmitted infection testing due to genital symptoms is more likely than asymptomatic screening. Few providers collect routine sexual histories from older adult patients, although older adults are receptive to sexual history taking. CONCLUSIONS: There are missed opportunities to identify sexually transmitted infections and human immunodeficiency virus in older adults. Stereotypes and assumptions have hindered providers from identifying and testing older adults at risk for human immunodeficiency virus and sexually transmitted infections. RELEVANCE TO CLINICAL PRACTICE: Sexual health assessment is essential to comprehensive health care. A sexual history provides information that may indicate human immunodeficiency virus and sexually transmitted
infection testing. Detection and treatment of human immunodeficiency virus and sexually transmitted infections will break the chain of infection and improve quality of life.


More than 50% of women living with HIV in low- and middle-income countries are of reproductive age, but there are limitations to the administration of oral contraception for HIV-infected women receiving antiretroviral therapy due to drug-drug interactions caused by metabolism via the cytochrome P450 isoenzymes and glucuronidation. However, with the development of newer antiretrovirals that use alternative metabolic pathways, options for contraception in HIV-positive women are increasing. This paper aims to review the literature on the pharmacokinetics and pharmacodynamics of oral hormonal contraceptives when given with antiretroviral agents, including those currently used in developed countries, older ones that might still be used in salvage regimens, or those used in resource-limited settings, as well as newer drugs. Nucleos(t)ide reverse transcriptase inhibitors (NRTIs), the usual backbone to most combined antiretroviral treatments (cARTs) are characterised by a low potential for drug-drug interactions with oral contraceptives. On the other hand non-NRTIs (NNRTIs) and protease inhibitors (PIs) may interact with oral contraceptives. Of the NNRTIs, efavirenz and nevirapine have been demonstrated to cause drug-drug interactions; however, etravirine and rilpivirine appear safe to use without dose adjustment. PIs boosted with ritonavir are not recommended to be used with oral contraceptives, with the exception of boosted atazanavir which should be used with doses of at least 35 microg of estrogen. Maraviroc, an entry inhibitor, is safe for co-administration with oral contraceptives, as are the integrase inhibitors (INIs) raltegravir and dolutegravir. However, the INI elvitegravir, which is given in combination with cobicistat, requires a dose of estrogen of at least 30 microg. Despite the growing evidence in this field, data are still lacking in terms of large cohort studies, randomised trials and correlations to real clinical outcomes, such as pregnancy rates, in women on antiretrovirals and hormonal contraception.


IMPORTANCE: Age-related hearing loss affects quality of life. Data on hearing loss among aging human immunodeficiency virus-seropositive (HIV+) adults are limited. OBJECTIVE: To evaluate pure-tone hearing thresholds among HIV+ and HIV-seronegative (HIV-) adults and to determine whether HIV disease variables and antiretroviral therapy are associated with pure-tone threshold levels. DESIGN, SETTING, AND PARTICIPANTS: A total of 262 men (117 HIV+) from the Baltimore, Maryland/Washington, DC, site of the Multicenter AIDS Cohort Study and 134 women (105 HIV+) from the Washington, DC, site of the Women's Intergency HIV Study participated. Pure-tone air conduction thresholds were collected in a sound-treated room for each ear at frequencies from 250 through 8000 Hz. Linear mixed regression models tested the effect of HIV on hearing after adjustment for age, sex, race, and noise exposure history. MAIN OUTCOMES AND MEASURES: Low-frequency pure-tone average (LPTA) at 250, 500, 1000, and 2000 Hz and high-frequency PTA (HPTA) at 3000, 4000, 6000, and 8000 Hz. Differential HIV effects for LPTA and HPTA and better/worse ear were also examined. CD4+ and CD8+ T-cell counts, log10 plasma HIV RNA concentrations, receipt of AIDS diagnosis, and cumulative duration of antiretroviral therapy were included in the models for HIV+ participants only. RESULTS: HPTA and LPTA were significantly higher (18%: estimated ratio, 1.18 [95% CI, 1.02-1.36]; P = .02; and 12%: estimated ratio, 1.12 [95% CI, 1.00-1.26]; P = .05, respectively) for HIV+ participants compared with HIV-participants for the better ear. The direction of the effect was consistent across both the better and worse ears. There were no significant associations between HIV disease variables or treatment variables and LPTA or HPTA. CONCLUSIONS AND RELEVANCE: The HIV+ adults had significantly poorer lower-frequency and higher-frequency hearing than HIV- adults. High-frequency hearing loss is consistent with an accelerated aging (presbycusis); low-frequency hearing loss in middle age is unexpected. Because
some vowels and consonants have predominantly low-frequency acoustic energy, poor low-frequency hearing may impair communication in HIV+ individuals.


In the USA, the impact of psychological distress may be greater for Black men who have sex with men given that they may experience both racial discrimination in society at large and discrimination due to sexual orientation within Black communities. Attachments to community members may play a role in addressing psychological distress for members of this vulnerable population. This analysis is based on 312 Black men who have sex with men recruited for a behavioural intervention trial in New York City. Analyses were conducted using bivariate and multivariable logistic regression to examine the relationship of discrimination and community attachment to psychological distress. Most participants (63%) reported exposure to both discrimination due to race and sexual orientation. However, a majority of participants (89%) also reported racial and/or sexual orientation community attachment. Psychological distress was significant and negatively associated with older age (40 years and above), being a high school graduate and having racial and/or sexual orientation community attachments. Psychological distress was significantly and positively associated with being HIV-positive and experiencing both racial and sexual orientation discrimination. Similar results were found in the multivariable model. Susceptibility to disparate psychological distress outcomes must be understood in relation to social membership, including its particular norms, structures and ecological milieu.


BACKGROUND AND OBJECTIVES: One in seven HIV-infected individuals is incarcerated each year. We used data from the Veterans Aging Cohort Study (VACS) to explore the relationship between incarceration and HIV disease outcomes and evaluate potential mediators of this relationship. METHODS: HIV disease outcomes included: low CD4 counts (<200 cells/mL), detectable viral RNA loads (>500 copies/mL), and the VACS Index score. We performed a mediation analysis among 1,591 HIV-infected patients to examine whether unhealthy alcohol use, drug use, primary care engagement, or antiretroviral adherence mediated observed associations. RESULTS: Among 1,591 HIV-infected patients, 47% reported having a history of incarceration. In multivariate analyses, a history of incarceration was associated with a higher VACS Index score (beta 2.47, 95% CI 0.52-4.43). Mediation analysis revealed that recent drug use attenuated the association by 22% (beta 1.93, 95% CI -0.06, 3.91) while other proposed mediators did not. CONCLUSIONS AND SCIENTIFIC SIGNIFICANCE: Improving access to drug treatment when incarcerated and upon release may be an important target to improving the health of HIV-infected individuals with a history of incarceration. (Am J Addict 2015;XX:XX-XX).


BACKGROUND: Sexual health and function is an important yet understudied aspect of overall health and well-being in older adults. There are limited data on the relative strength of associations between various aspects of sexual health with the physical, emotional, and cognitive function in older adults. Additionally, there is little information on how these associations differ by age and sex. METHODS: In this Successful Aging Evaluation (SAGE) study, 606 community-dwelling adults in San Diego County, aged 50-99 years and who had a partner, were included in the analysis. Evaluations included a phone-based cognitive screening followed by a comprehensive mail-in survey including rating scales of sexual health, depression, anxiety, and physical function. RESULTS: The mean age of the sample was 75.2 years. Over 80% of respondents had engaged in sexual activity in the past year, over 70% engaged in sexual activity weekly or more than once a week, and over 60% were somewhat or very satisfied with their sex lives. No sex differences were evident on dimensions of sexual health except for a higher rate of rejection of sexual overtures by women. Depressive symptoms were negatively associated with all assessed
aspects of sexual health, even after adjusting for age, physical functioning, anxiety, cognitive ability, or perceived stress in both men and women. CONCLUSIONS: In this population-based study older men and women who had a partner reported frequent engagement in and satisfaction with sexual activity. Depressive symptoms were broadly associated with worse sexual health, more so than physical function, anxiety or stress, or age itself.


Combination antiretroviral therapy transformed human immunodeficiency virus (HIV)-infection from a terminal illness to a manageable condition, but these patients remain at a significantly elevated risk of developing cognitive impairments and the mechanisms are not understood. Some previous neuroimaging studies have found hyperactivation in frontoparietal networks of HIV-infected patients, whereas others reported aberrations restricted to sensory cortices. In this study, we utilize high-resolution structural and neurophysiological imaging to determine whether alterations in brain structure, function, or both contribute to HIV-related cognitive impairments. HIV-infected adults and individually matched controls completed 3-Tesla structural magnetic resonance imaging (sMRI) and a mechanoreception task during magnetoencephalography (MEG). MEG data were examined using advanced beamforming methods, and sMRI data were analyzed using the latest voxel-based morphometry methods with DARTEL. We found significantly reduced theta responses in the postcentral gyrus and increased alpha activity in the prefrontal cortices of HIV-infected patients compared with controls. Patients also had reduced gray matter volume in the postcentral gyrus, parahippocampal gyrus, and other regions. Importantly, reduced gray matter volume in the left postcentral gyrus was spatially coincident with abnormal MEG responses in HIV-infected patients. Finally, left prefrontal and postcentral gyrus activity was correlated with neuropsychological performance and, when used in conjunction, these two MEG findings had a sensitivity and specificity of over 87.5% for HIV-associated cognitive impairment. This study is the first to demonstrate abnormally increased activity in association cortices with simultaneously decreased activity in sensory areas. These MEG findings had excellent sensitivity and specificity for HIV-associated cognitive impairment, and may hold promise as a potential disease marker.


PURPOSE OF REVIEW: With the overwhelming success of combination antiretroviral therapy, HIV infection is now a chronic, but manageable, medical condition. Consequently, HIV-infected cohorts are ageing leading to new challenges in the life-long management of this condition. Here, we review recent data concerning the modern treatment of older HIV-infected adults. RECENT FINDINGS: HIV-infected cohorts are ageing with the majority of those infected predicted to be more than 50 years old within the next 2 decades. There is emerging evidence of increased antiretroviral drug exposure in older individuals, but the evidence this leads to increased toxicity is less clear-cut. In addition, the choice of antiretroviral agents is more challenging in older HIV-infected patients because of the presence of comorbidities, which occur more commonly and at a younger age than in HIV-uninfected individuals and because of a higher propensity for drug-drug interactions due to the use of concomitant medications. Specific recommendations regarding antiretroviral treatment of older HIV-infected individuals are lacking and prospective trials in older age groups are urgently needed. SUMMARY: The use of antiretroviral therapies in older individuals is complex. Development of novel antiretrovirals and
antiretroviral combinations with a low propensity for toxicity, drug-drug interactions and reliable pharmacology regardless of age is urgently needed.


Women are living longer with HIV infection, but their life expectancy remains shorter than for women in the general population. How best to manage the multiple comorbidities and polypharmacy that are common in individuals with HIV has not been studied. This article explores areas where the primary care of women with HIV may differ from that of aging women in the general population. We also discuss aspects of care that may not commonly be considered in those under the age of 65, specifically multimorbidity and polypharmacy. Incorporating a gerontologic approach in the care of these women may optimize outcomes until research provides more definitive answers for how best to collaborate with women with HIV in order to provide them with optimal care.


BACKGROUND: Retention in care is important for all HIV-infected persons and is strongly associated with initiation of antiretroviral therapy and viral suppression. However, it is unclear how retention in care and age interact to affect viral suppression. We evaluated whether the association between retention and viral suppression differed by age at entry into care. METHODS: Cross-sectional analysis (2006-2010) involving 17,044 HIV-infected adults in 14 clinical cohorts across the United States and Canada. Patients contributed 1 year of data during their first full-calendar year of clinical observation. Poisson regression examined associations between retention measures [US National HIV/AIDS Strategy (NHAS), US Department of Health and Human Services (DHHS), 6-month gap, and 3-month visit constancy] and viral suppression (HIV RNA <200 copies/mL) by age group: 18-29 years, 30-39 years, 40-49 years, 50-59 years, and 60 years or older. RESULTS: Overall, 89% of patients were retained in care using the NHAS measure, 74% with the DHHS indicator, 85% did not have a 6-month gap, and 62% had visits in 3 quarters of the year; 54% achieved viral suppression. For each retention measure, the association with viral suppression was significant for only the younger age groups (18-29 and 30-39 years): 18-29 years [adjusted prevalence ratio (APR) = 1.33, 95% confidence interval (CI): 1.03 to 1.70]; 30-39 years [APR = 1.23, 95% CI: 1.01 to 1.49]; 40-49 years [APR = 1.06, 95% CI: 0.90 to 1.22]; 50-59 [APR = 0.92, 95% CI: 0.75 to 1.13]; >/=60 years [APR = 0.99, 95% CI: 0.63 to 1.56] using the NHAS measure as a representative example. CONCLUSIONS: These results have important implications for improving viral control among younger adults, emphasizing the crucial role retention in care plays in supporting viral suppression in this population.


BACKGROUND: Weight gain after antiretroviral therapy (ART) initiation is common but its implication for mortality is unknown. We evaluated weight change in the first year after ART initiation and its association with subsequent mortality. METHODS: HIV infected patients from the Veterans Aging Cohort Study (VACS) who initiated ART between 2000 and 2008 with weight recorded at baseline and 1 year later, were followed another 5 years for mortality. Baseline body mass index (BMI in kg/m2) was classified as underweight (<18.5), normal (18.5-24.9), overweight (25-29.9), and obese (>/>=30). We used multivariable Cox models to assess mortality risk with adjustment for disease severity using the VACS Index. RESULTS: The sample consisted of 4184 men and 127 women with mean age of 47.9 +/- 10.0 years. After 1 year of ART, median weight change was 5.9 (IQR = -2.9, 17.0) pounds. Weight gain after ART initiation was associated with lower mortality among underweight and normal weight patients. A minimum threshold of 10 to <20 pound weight gain was beneficial for normal weight patients (hazard ratio [HR], 0.56; 95% confidence interval [CI], 0.41-0.78), but there was no clear benefit to weight gain for overweight/obese patients. Baseline weight, CD4 status, and hemoglobin level were strongly associated with weight gain. Risk for weight gain was higher among those with the greater disease
severity, regardless of weight at initiation. CONCLUSION: The survival benefits of weight gain after ART initiation are dependent on starting BMI. Weight gain after ART is associated with lower mortality for those who are not initially overweight.


The objective of this study was to investigate HIV disclosure activities in social support networks of people living with HIV/AIDS (PLWHAs). An egocentric network study was conducted in Nanning, China. A sample of 147 PLWHAs (egos) nominated 922 network members (alters) who would provide egos with social support. All egos disclosed their HIV status to at least one alter in their support networks and 26.5% disclosed to all alters. Among network alters, 95.7% of spouse alters, 59.9% of other family member alters, and 29.7% of friend alters were aware of egos’ HIV status. PLWA egos were more likely to disclose their HIV status to their spouse and other family members, frequently-contacted alters, and alters who provided more social support. In addition, older egos and unmarried egos were more likely to disclose their HIV status. The findings indicate that network-based HIV intervention programs should take into consideration selective disclosure in social networks.


OBJECTIVES: Certain non-AIDS-related diseases have been associated with immunodeficiency and HIV RNA levels in HIV-infected patients on combination antiretroviral therapy (cART). We aimed to investigate these associations in patients not yet on cART, when potential antiretroviral-drug-related effects are absent and variation in RNA levels is greater. METHODS: Associations between, on the one hand, time-updated CD4 counts and plasma HIV RNA and, on the other hand, a composite non-AIDS-related endpoint, including major cardiovascular diseases, liver fibrosis/cirrhosis, and non-AIDS-related malignancies, were studied with multivariate Poisson regression models in 12,800 patients diagnosed with HIV infection from 1998 onwards while not yet treated with cART. RESULTS: During 18,646 person-years of follow-up, 203 non-AIDS-related events occurred. Compared with a CD4 count >/= 500 cells/μL, adjusted relative risks (RRs) for the composite endpoint were 4.71 [95% confidence interval (CI) 2.98-7.45] for a CD4 count < 200 cells/μL, 2.06 (95% CI 1.38-3.06) for a CD4 count of 200-349 cells/μL, and 1.19 (95% CI 0.82-1.74) for a CD4 count of 350-499 cells/μL. There was no evidence for an independent association with HIV RNA. Other important covariates were age [RR 1.40 (95% CI 1.31-1.49) per 5 years older], hepatitis B virus coinfection [RR 5.66 (95% CI 3.87-8.28)] and hepatitis C virus coinfection [RR 9.26 (95% CI 6.04-14.42)]. CONCLUSIONS: In persons not yet receiving cART, a more severe degree of immunodeficiency rather than higher HIV RNA levels appears to be associated with an increased risk of our composite non-AIDS-related endpoint. Larger studies are needed to address these associations for individual non-AIDS-related events.


BACKGROUND: Human immunodeficiency virus (HIV) infection is associated with increased cardiovascular risk, and this risk correlates with markers of monocyte activation. We have shown that HIV is associated with a prothrombotic monocyte phenotype, which can be partially mitigated by statin therapy. We therefore explored the relationship between oxidized LDL particles and monocyte activation. METHODS: We performed phenotypic analysis of monocytes using flow cytometry on fresh whole blood in 54 patients with HIV and 24 controls without HIV. Plasma levels of oxLDL, soluble CD14, IL-6, soluble CD163 were measured by ELISA. In vitro experiments were performed using flow cytometry. RESULTS: Plasma levels of oxLDL were significantly increased in HIV-infection compared to controls (60.1 units vs 32.1 units, p<0.001). Monocyte expression of the oxLDL receptors, CD36 and Toll-like receptor 4, were also increased in HIV. OxLDL levels correlated with markers of monocyte activation, including soluble CD14, TF expression on inflammatory monocytes, and CD36. In vitro, stimulation with oxLDL, but not to
LDL, resulted in expansion of inflammatory monocytes and increased monocyte expression of TF, recapitulating the monocyte profile we find in HIV disease. CONCLUSIONS: OxLDL may contribute to monocyte activation and further study in the context of HIV disease is warranted.
