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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.


The natural history of the pediatric HIV epidemic has changed since the introduction of strategies for the prevention of mother-to-child transmission and the implementation of highly active antiretroviral therapy. The demographic characteristics of the pediatric HIV-infected population and the incidence and pattern of HIV-related morbidity, as well as mortality rates, have been remarkably modified. This report gives an overview on the main changes that occurred in Western countries.


Despite having higher rates of HIV testing than all other racial groups, African-Americans continue to be disproportionately affected by the HIV epidemic in the United States. Knowing one's status is the key step to maintaining behavioral changes that could stop the spread of the virus, yet little is known about the individual- and socio-structural-level barriers associated with HIV testing and communication among heterosexual African-American men. To address this and inform the development of an HIV prevention behavioral intervention for heterosexual African-American men, we conducted computerized, structured interviews with 61 men, focus group interviews with 25 men in 5 different groups, and in-depth qualitative interviews with 30 men living in high HIV prevalence neighborhoods in New York City. Results revealed that HIV testing was frequent among the participants. Even with high rates of testing, the men in the study had low levels of HIV knowledge; perceived little risk of HIV; and misused HIV testing as a prevention method. Factors affecting HIV testing, included stigma, relationship dynamics and communication, and societal influences, suggesting that fear, low perception of risk, and HIV stigma may be the biggest barriers to HIV testing. These results also suggest that interventions directed toward African-American heterosexual men must address the use of "testing as prevention" as well as correct misunderstandings of the window period and the meaning of HIV test results, and interventions should focus on communicating about HIV.
Research shows that chronic illness patients encounter difficulties in the social sharing of emotions (SSE). Since most SSE studies focus on quantitative aspects, the present study, aimed, among others, to study the associations between the quality of SSE in people living with HIV/AIDS and patients' psychological and physical well-being. A total of 101 HIV/AIDS patients answered a questionnaire (Likert scale items) which assessed: shame, guilt, perceived stigma, reasons for non-disclosure of serostatus, physical health, mental health, SSE and quality of SSE. While no associations were found between quantitative aspects of SSE, physical health and mental health, the quality of SSE was negatively correlated to shame and guilt, and positively correlated to physical and mental health. Furthermore, mediation analyses showed the mediating role of the quality of SSE in the relationship between, on the one hand, shame and guilt; and on the other hand, physical and mental health. Findings suggest the importance of qualitative aspects of SSE in the emergence of positive outcomes linked to emotional expression in people living with HIV/AIDS.

BACKGROUND: Living with human immunodeficiency virus (HIV) necessitates long-term health care follow-up, particularly with respect to antiretroviral therapy (ART) management. Taking advantage of the enormous possibilities afforded by information and communication technologies (ICT), we developed a virtual nursing intervention (VIH-TAVIE) intended to empower HIV patients to manage their ART and their symptoms optimally. ICT interventions hold great promise across the entire continuum of HIV patient care but further research is needed to properly evaluate their effectiveness. OBJECTIVE: The objective of the study was to compare the effectiveness of two types of follow-up—traditional and virtual—in terms of promoting ART adherence among HIV patients. METHODS: A quasi-experimental study was conducted. Participants were 179 HIV patients on ART for at least 6 months, of which 99 were recruited at a site offering virtual follow-up and 80 at another site offering only traditional follow-up. The primary outcome was medication adherence and the secondary outcomes were the following cognitive and affective variables: self-efficacy, attitude toward medication intake, symptom-related discomfort, stress, and social support. These were evaluated by self-administered questionnaire at baseline (T0), and 3 (T3) and 6 months (T6) later. RESULTS: On average, participants had been living with HIV for 14 years and had been on ART for 11 years. The groups were highly heterogeneous, differing on a number of sociodemographic dimensions: education, income, marital status, employment status, and living arrangements. Adherence at baseline was high, reaching 80% (59/74) in the
traditional follow-up group and 84% (81/97) in the virtual follow-up group. A generalized estimating equations (GEE) analysis was run, controlling for sociodemographic characteristics at baseline. A time effect was detected indicating that both groups improved in adherence over time but did not differ in this regard. Improvement at 6 months was significantly greater than at 3 months in both groups. Analysis of variance revealed no significant group-by-time interaction effect on any of the secondary outcomes. A time effect was observed for the two kinds of follow-ups; both groups improved on symptom-related discomfort and social support.

CONCLUSIONS: Results showed that both interventions improved adherence to ART. Thus, the two kinds of follow-up can be used to promote treatment adherence among HIV patients on ART.


HIV-infected children usually live in vulnerable situations, experiencing discrimination and stigma commonly felt by other people living with HIV/AIDS. The present study aims to analyse primary socialisation of HIV-infected children and adolescents recruited from a public health service in Rio de Janeiro (Brazil) as a social process that shapes a new generation of stigmatised and vulnerable persons. Research was informed by an interactionist perspective, focusing on key aspects of HIV-infected children and adolescents life histories under the conceptual frame of Erving Goffman's theories regarding "moral careers". Goffman defines the making of a moral career as the process through which a person learns that she/he possesses a particular attribute, which may lead her/him to be discredited by members of the surrounding society. We have identified aspects of life histories of HIV-vertically infected children and adolescents for each aspect of "moral career" as described by Goffman, relating them to as family structure, the experience of living HIV within the family, and the position and family role of a given subject. The patterns of "moral career" proposed by Goffman in 1963 were useful in identifying components of HIV-related stigma among children and adolescents. These include gender and social disadvantages, difficulty in coping with a child with a potentially severe disease, orphanhood, abandonment, adoption and disclosure of one's HIV serostatus. Primary socialisation of HIV-infected children and adolescents is a key piece of the complex HIV/AIDS-labelling process that could be targeted by interventions aiming to decrease stigma and marginalisation. Health care workers and stakeholders should be committed to ensuring education and guaranteeing the legal rights of this specific population, including the continuous provision of quality health care, full access to school and support to full disclosure of HIV diagnosis.


Monitoring infections and risk in people who inject drugs (PWID) is important for informing public health responses. In 2011, a novel hepatitis C antibody (anti-HCV)
avidity-testing algorithm to identify samples compatible with recent primary infection was introduced into a national surveillance survey. PWID are recruited annually, through >60 needle-and-syringe programmes and prescribing services. Of the 980 individuals that could have been at risk of HCV infection, there were 20 (2%) samples that were compatible with recent primary infection. These were more common among: those imprisoned 5 times [8/213; adjusted odds ratio (aOR) 87, 95% confidence interval (CI) 204-3703]; women (8/230; aOR 38, 95% CI 141-1038); and those ever-infected with hepatitis B (5/56; aOR 625, 95% CI 212-1843). This study is the first to apply this algorithm and to examine the risk factors associated with recently acquired HCV infection in a national sample of PWID in the UK. These findings highlight underlying risks and suggest targeted interventions are needed.


In the industrialized world, extraordinary successes have been attained in reducing mother-to-child HIV transmission and improving the survival of children with HIV infection; however, significant challenges remain.


OBJECTIVE: Timely HIV testing among recently HIV-infected gay men may enable earlier access to clinical care and changes in behaviour that will reduce onward transmission. We investigated the testing practices of men recently diagnosed with HIV to identify factors associated with recent testing. METHODS: In an online survey of men in Australia recently diagnosed with HIV, participants were asked about their HIV testing history, perceived impediments to testing prior to diagnosis, motivation for testing at the time of diagnosis and a range of demographic and behavioural characteristics. Descriptive statistics were used to compare those men who reported recent HIV testing with those men who had not tested for HIV in the 12 months before their diagnosis. RESULTS: Of 187 men who provided information about their testing history and social connectedness, 6.4% were previously untested for HIV, whereas 65.8% had last tested within the 12 months prior to their diagnosis. Factors associated with having tested more recently were being more socially engaged with other gay men (OR 1.34; 95% CI 1.10 to 1.63; p=0.003) and having greater optimism about HIV health (OR 1.13; 95% CI 1.00 to 1.27; p=0.047). In multivariate analysis, only level of social engagement with other gay men remained independently associated (adjusted OR 1.30; 95% CI 1.07 to 1.59; p=0.003). CONCLUSIONS: Gay community plays a key role in the response to HIV in Australia. Building a sense of community through programmes that support social engagement between gay men may support earlier and more frequent testing.

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The objective of this study was to develop a multidisciplinary guideline that supports the care and vocational rehabilitation of HIV-infected people with employment-related problems. The guideline was developed according to the "evidence-based guideline development" method developed by the Dutch Institute for Health Care Improvement. This method consists of the following steps: forming a multidisciplinary core group and an expert panel, formulating key questions, searching and appraising the available literature, formulating considerations and recommendations, peer reviewing the draft guideline, and authorizing the final guideline. All relevant professional associations were represented in the core group that was assembled to develop the guideline, i.e., HIV doctors, HIV nurses, general practitioners, occupational health physicians, psychologists, social workers, occupational health nurses, vocational experts, and insurance physicians. Five key questions for the guideline were formulated with the following themes: determinants of employment, disclosure and stigma, self-management, interventions, and the organization of care. In the literature review on these topics, 45 studies met the inclusion criteria. The methodological quality of the included articles was poor. Factors such as patient preferences and medical/ethical issues were considered. The recommendations in the guideline are a weighting of the scientific evidence and the considerations of the core group. The guideline, as well as its summary for daily practice, clarifies the most important barriers and facilitators to people with HIV either staying at work or returning to work, and it constitutes a clinical, easy-to-use guideline for health-care providers and how they can support people with HIV who want to work.

(15) Dyer C. Three men infected with hepatitis C through contaminated blood start legal proceedings against UK government. BMJ 2015 ;350( ):h302


OBJECTIVES: This study estimates HIV prevalence among men who have sex with men (MSM) in Jamaica and explores social determinants of HIV infection among MSM. DESIGN: An island-wide cross-sectional survey of MSM recruited by peer referral and outreach was conducted in 2011. A structured questionnaire was administered and HIV/STI tests done. We compared three groups: MSM who accepted cash for sex within the past 3 months (MSM SW), MSM who did not accept cash for sex (MSM non-SW), and MSM with adverse life events (ever raped, jailed, homeless, victim of violence or low literacy). RESULTS: HIV prevalence among 449 MSM was 31.4%, MSM SW 41.1%, MSM with adverse life events 38.5%, 17 transgender MSM (52.9%), and MSM non-SW without adverse events 21.0%. HIV prevalence increased with age and number of adverse life events (test for trend P < 0.001), as did STI prevalence (P = 0.03). HIV incidence was 6.7 cases/100 person-years.
years (95% CI: 3.74, 12.19). HIV prevalence was highest among MSM reporting high-risk sex; MSM SW who had been raped (65.0%), had a STI (61.2%) and who self identified as female (55.6%). Significant risk factors for HIV infection common to all 3 subgroups were participation in both receptive and insertive anal intercourse, high-risk sex, and history of a STI. Perception of no or little risk, always using a condom, and being bisexual were protective. CONCLUSION: HIV prevalence was high among MSM SW and MSM with adverse life events. Given the characteristics of the sample, HIV prevalence among MSM in Jamaica is probably in the range of 20%. The study illustrates the importance of social vulnerability in driving the HIV epidemic. Programs to empower young MSM, reduce social vulnerability and other structural barriers including stigma and discrimination against MSM are critical to reduce HIV transmission.


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) 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.


Worldwide, the benefits of combined antiretroviral (ARV) therapy in morbidity and mortality due to perinatally acquired human immunodeficiency virus infection are beyond question and outweigh the toxicity these drugs have been associated with in HIV-infected children and adolescents to date. In puberty, abnormal body fat distribution is stigmatizing and leads to low adherence to ARV treatment. The other metabolic comorbidities (mitochondrial toxicity, dyslipidemias, insulin resistance and low bone mineral density) and renal toxicity, albeit nonsymptomatic in most children, are increasingly being reported and potentially put this population at risk for early cardiovascular or cerebrovascular atherosclerotic disease, diabetes, pathologic fractures or premature renal failure in the third and fourth decades of life. Evidence
from available studies is limited because of methodological limitations and also because of several HIV-unrelated factors influencing, to some degree, the development of these conditions. Current recommendations for the prevention, diagnosis, monitoring and treatment of metabolic and renal adverse effects in HIV-children and adolescents are based on adult studies, observational pediatric studies and experts' consensus. Healthy lifestyle habits (regarding diet, exercise and refraining from toxic substances) and wise use of ARV options are the only preventive tools for the majority of patients. Should abnormal findings arise, switches in one or more ARV drugs have proved useful. Specific therapies are also available for some of these comorbidities, although the experience in the pediatric age is still very scarce. We aim to summarize the epidemiological, clinical and therapeutic aspects of metabolic and renal adverse effects in vertically HIV-infected children and adolescents.


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.


Over the last 2 decades, human immunodeficiency virus (HIV) illness has transformed to a chronic disease model. However, challenges, including the effects of co-morbid illnesses and the challenge of preventing future spread of the disease, continue to confront those infected with HIV. Addictions remain an important problem and a serious contributor to overall morbidity and mortality in this population. This book chapter seeks to illustrate the new developments in the treatment of these addictions as well as provide an overview of the medical updates regarding HIV and hepatitis C virus exposure prophylaxis and how they relate to the consultant psychiatrist. Copyright © 2015 S. Karger AG, Basel.
The cellular mechanism of RNA interference (RNAi) plays an antiviral role in many organisms and can be used for the development of therapeutic strategies against viral pathogens. Persistent infections like the one caused by the human immunodeficiency virus type 1 (HIV-1) likely require a durable gene therapy approach. The continuous expression of the inhibitory RNA molecules in T cells is needed to effectively block HIV-1 replication. We discuss here several issues, ranging from the choice of RNAi inhibitor and vector system, finding the best target in the HIV-1 RNA genome, alternatively by targeting host mRNAs that encode important viral cofactors, to the setup of appropriate preclinical test systems. Finally, we briefly discuss the relevance of this topic for other viral pathogens that cause a chronic infection in humans.

BACKGROUND: Researchers and practitioners interested in developing online health interventions most often rely on Web-based and print resources to guide them through the process of online intervention development. Although useful for understanding many aspects of best practices for website development, missing from these resources are concrete examples of experiences in online intervention development for health apps from the perspective of those conducting online health interventions. OBJECTIVE: This study aims to serve as a series of case studies in the development of online health interventions to provide insights for researchers and practitioners who are considering technology-based interventional or programmatic approaches. METHODS: A convenience sample of six study coordinators and five principal investigators at a large, US-based land grant university were interviewed about the process of developing online interventions in the areas of alcohol policy, adolescent health, medication adherence, and human immunodeficiency virus prevention in transgender persons and in men who have sex with men. Participants were asked questions that broadly addressed each of the four phases of the User-Centered Design Process Map from the US Department of Health and Human Services' Research-Based Web Design & Usability Guidelines. Interviews were audio recorded and transcribed. Qualitative codes were developed using line-by-line open coding for all transcripts, and all transcripts were coded independently by at least 2 authors. Differences among coders were resolved with discussion. RESULTS: We identified the following seven themes: (1) hire a strong (or at least the right) research team, (2) take time to plan before beginning the design process, (3) recognize that vendors and researchers have differing values, objectives, and language, (4) develop a detailed contract, (5) document all decisions and development activities, (6) use a content management system, and (7) allow extra time for testing and debugging your intervention. Each of these areas is discussed in detail, with supporting quotations from principal investigators and study coordinators. CONCLUSIONS: The values held by members of each participating organization involved in the development of the online intervention or program, as
well as the objectives that are trying to be met with the website, must be considered. These defined values and objectives should prompt an open and explicit discussion about the scope of work, budget, and other needs from the perspectives of each organization. Because of the complexity of developing online interventions, researchers and practitioners should become familiar with the process and how it may differ from the development and implementation of in-person interventions or programs. To assist with this, the intervention team should consider expanding the team to include experts in computer science or learning technologies, as well as taking advantage of institutional resources that will be needed for successful completion of the project. Finally, we describe the tradeoff between funds available for online intervention or program development and the complexity of the project.


Our aim was to study the prevalence and incidence of patients with human immunodeficiency virus (HIV) in the general population in Stockholm, Sweden. We also aimed to study mortality among individuals with HIV and to explore co-morbidities. The study population included all living persons who resided in Stockholm County, Sweden, as of 31 December 2012 (N = 2,212,435). Information on all consultations between 2007 and 2012 was obtained from primary health care, specialist outpatient care and inpatient care. Analyses were done by age and gender. All patients with a recorded diagnosis of HIV were included. The prevalence of HIV was calculated using 2012 data. The prevalence of HIV in Stockholm area as per end of December 2012 was as low as 0.1% in females and 0.2% in males, and the annual incidence of HIV continued to decline over the years. In recent years, cancers, diabetes and hypertension were about as common in individuals with HIV as in the general population. Males with HIV had 3- to 4-fold higher age-adjusted odds of being diagnosed with depression and 3-fold higher odds of anxiety disorders and women had 1.6 to 2-fold higher age-adjusted odds of depression and anxiety disorders, than males and females in the general population, respectively. The relatively good somatic health observed in this study could be attributed to nearly optimal HIV therapy in Sweden. The mental health of HIV patients was significantly worse than that in the general population and needs further attention.


In the event of acute infection, only a few HIV-1 viral variants can establish the initial productive clinical infection, and these viral variants are known as transmitted/founder viruses (T/F viruses). As one of the accessory proteins of HIV-1, viral protein R (Vpr) plays an important role in viral replication. Therefore, the characterization of T/F virus Vpr is beneficial to understand how virus replicates in a new host. In this study, flow cytometry was used to analyze the effect of G2arrest and cell apoptosis induced by the T/F virus Vpr and the chronic strain MJ4 Vpr. The results showed that the ability of T/F virus ZM246 Vpr and ZM247 Vpr inducing
G2arrest and cell apoptosis are more potent than the MJ4 Vpr. The comparison of protein sequences indicated that the amino acids of 77, 85 and 94 contain high frequency mutations, suggesting that these sites may be involved in inducing G2arrest and cell apoptosis. Taken together, our work suggests that in acute infections, T/F viruses increase the capacity of G2arrest and cell apoptosis and promote viral replication and transmission in a new host by Vpr genetic mutation.


Human immunodeficiency virus (HIV) infection disturbs the host's immune function and often coexists with various autoimmune and/or systemic rheumatic diseases with manifestations that sometimes overlap with each other. We herein present the case of a 43-year-old Japanese man infected with HIV who exhibited elevated serum creatine kinase and transaminases levels without any symptoms. He was diagnosed with autoimmune hepatitis, polymyositis and Sjogren's syndrome and received combined antiretroviral therapy (cART); however, the laboratory abnormalities persisted. We successfully administered cART with the addition of oral prednisolone, and the patient's condition recovered without side effects related to the metabolic or immunosuppressive effects of these drugs.

(26) Kmietowicz Z. Pre-exposure prophylaxis protects against HIV infection in real world setting, study finds. BMJ 2015 ;350( ):h1076


A successful treatment of AIDS world-wide is severely hindered by the HIV virus' drug resistance capability resulting from complicated mutation patterns of viral proteins. Such a system of mutations enables the virus to survive and reproduce despite the presence of various antiretroviral drugs by disrupting their binding capability. Although these interacting mutation patterns are extremely difficult to efficiently uncover and interpret, they contribute valuable information to personalized therapeutic regimen design. The use of Bayesian statistical modeling provides an unprecedented opportunity in the field of anti-HIV therapy to understand detailed interaction structures of drug resistant mutations. Multiple Bayesian models equipped with Markov Chain Monte Carlo (MCMC) methods have been recently proposed in this field (Zhang et al. in PNAS 107:1321, 2010 [1]; Zhang et al. in J Proteome Sci Comput Biol 1:2, 2012 [2]; Svicher et al. in Antiviral Res 93(1):86-93, 2012 [3]; Svicher et al. in Antiviral Therapy 16(7):1035-1045, 2011 [4]; Svicher et al. in Antiviral Ther 16(4):A14-A14, 2011 [5]; Svicher et al. in Antiviral Ther 16(4):A85-A85, 2011 [6]; Alteri et al. in Signature mutations in V3 and bridging sheet domain of HIV-1 gp120 HIV-1 are specifically associated with dual tropism and modulate the interaction with CCR5 N-Terminus, 2011 [7]). Probabilistically modeling mutations in
the HIV-1 protease or reverse transcriptase (RT) isolated from drug-treated patients provides a powerful statistical procedure that first detects mutation combinations associated with single or multiple-drug resistance, and then infers detailed dependence structures among the interacting mutations in viral proteins (Zhang et al. in PNAS 107:1321, 2010 [1]; Zhang et al. in J Proteome Sci Comput Biol 1:2, 2012 [2]). Combined with molecular dynamics simulations and free energy calculations, Bayesian analysis predictions help to uncover genetic and structural mechanisms in the HIV treatment resistance. Results obtained with such stochastic methods pave the way not only for optimization of the use for existing HIV drugs, but also for the development of the new more efficient antiretroviral medicines. In this chapter we survey current challenges in the bioinformatics of anti-HIV therapy, and outline how recently emerged Bayesian methods can help with the clinical management of HIV-1 infection. We will provide a rigorous review of the Bayesian variable partition model and the recursive model selection procedure based on probability theory and mathematical data analysis techniques while highlighting real applications in HIV and HBV studies including HIV drug resistance (Zhang et al. in PNAS 107:1321, 2010 [1]), cross-resistance (Zhang et al. in J Proteome Sci Comput Biol 1:2, 2012 [2]), HIV coreceptor usage (Svicher et al. in Antiviral Therapy 16(7):1035-1045, 2011 [4]; Svicher et al. in Antiviral Ther 16(4):A14-A14, 2011 [5]; Alteri et al. in Signature mutations in V3 and bridging sheet domain of HIV-1 gp120 HIV-1 are specifically associated with dual tropism and modulate the interaction with CCR5 N-Terminus, 2011 [7]), and occult HBV infection (Svicher et al. in Antiviral Res 93(1):86-93, 2012 [3]; Svicher et al. in Antiviral Ther 16(4):A85-A85, 2011 [6]).


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.


Hepatitis C virus (HCV) is one of the major etiologic agents of liver cancer. HCV is an RNA virus that, unlike hepatitis B virus, is unable to integrate into the host genome. Through complex interactions between viral and host proteins that induce host responses and promote inflammation, fibrosis, and ultimately cirrhosis, HCV infection can result in the development of hepatocellular carcinoma (HCC). The HCV oncogenic process involves genetic and epigenetic alterations and oncogenic effects mediated by viral proteins in the activation of cellular oncogenes, inactivation of tumor-suppressor genes, and dysregulation of multiple signal-transduction pathways. Advances in genetics and gene expression profiling have enhanced our current understanding of the pathways involved in HCV-associated liver cancer development. In this review, we summarize the current understanding of mechanisms of hepatocarcinogenesis induced by HCV infection.


UNLABELLED: Liver fibrosis is used to make decisions about the timing of therapy against hepatitis C virus (HCV) in routine clinical practice, which should be based on the short-term likelihood of liver decompensations. Thus, we aimed at evaluating the risk of decompensations and death among human immunodeficiency virus (HIV)/HCV-coinfected individuals according to their baseline fibrosis classified by either liver biopsy or liver stiffness measurement (LSM). Patients coinfected with HIV/HCV, naive or without sustained virological response to HCV therapy, were included in this cohort. Fibrosis was classified by biopsy in 683 patients and by LSM in 1046 individuals. Reference categories were fibrosis stage 0 and LSM 14.6 kPa, 59.5 (8.3-427), P14.6 kPa, 12.7 (4.9-33.6), P<0.0001. CONCLUSION: Patients coinfected with HIV/HCV without advanced fibrosis are at very low risk of decompensations in the short term; deferral of HCV therapy for a few years and monitoring fibrosis progression is a safe option until cheaper, more effective, and more convenient HCV treatment becomes widely available. Copyright © 2014 by the American Association for the Study of Liver Diseases.

(33) Malbergier A, Amaral RA, Cardoso LD. Alcohol dependence and CD4 cell count: is there a relationship?. AIDS Care 2015;27(1):54-58
Alcohol and other drugs use seem to be common among people infected with HIV on antiretroviral treatment (ART). Their effects on HIV progression is still in debate. This study aimed to assess the association between alcohol and drug use and an HIV disease progression biomarker (CD4 cell count) among patients on ART. A cross-sectional study was carried out at an HIV treatment center affiliated with Medical School of the University of Sao Paulo, Brazil. Four hundred and thirty-eight HIV-positive patients on ART were interviewed by trained psychiatrists and psychologists using the following instruments: Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I), Alcohol Use Disorders Identification Test (AUDIT), 17-item Hamilton Rating Scale for Depression, and the Simplified Medication Adherence Questionnaire (SMAQ). In the previous month, 219 (50%) and 41 (9.3%) patients reported use of alcohol and illicit drugs, respectively. Fifty patients (12.6%) were classified as having harmful alcohol use by AUDIT. According to SCID-I, 80 patients (18.3%) were alcohol abusers, 24 (5.5%) alcohol dependents, and 21 (4.2%) had a current depressive disorder. Almost 73% (n = 319-72.8%) of the patients were adherent to ART. Alcohol dependents were nine times (p < 0.01) more likely to have CD4 cell count <200/mm(3), and this association was independent of ART adherence. In conclusion, alcohol dependence seems to be associated with low CD4 cell count in HIV-positive patients. Based on these data, HIV health care workers should always assess alcohol consumption in the treatment setting, and patients should be advised that alcohol dependence may be linked to low CD4.


A recent New York law requires medical providers to offer HIV tests as part of routine care. We developed a system dynamics simulation model of the HIV testing and care system to help administrators understand the law's potential epidemic impact, resource needs, strategies to improve implementation, and appropriate outcome indicators for future policy evaluations once postlaw data become available. Policy modeling allowed us to synthesize information from numerous sources including quantitative administrative data sets and practitioners' content expertise, structure the information to be viewed both numerically and visually, and organize consensus for decisionmaking purposes. This case illustrates how policy modeling can provide an integrated framework for administrators to examine policy problems in complex systems, particularly when data time lags limit pre--post comparisons and key outcomes cannot be measured directly.


Atypical presentations of genital herpes simplex virus have been described in HIV. We report two cases with hypertrophic presentations which were effectively
treated with imiquimod, one of which is the first reported case occurring in a patient with HIV-2. Copyright © The Author(s) 2014 Reprints and permissions: sagepub.co.uk/journalsPermissions.nav.


Chronic pain in HIV-infected individuals is common and often undertreated. Physical therapy (PT) is an evidence-based nonpharmacologic treatment for chronic pain. Our objective is to present the results of a pilot PT program in an HIV pain/palliative care clinic, which is embedded within a Ryan White-funded multidisciplinary HIV primary care clinic. Medical records of HIV-infected patients participating in a PT program between November 2012 and July 2013 were retrospectively reviewed. Pain scores on a 0-10 scale and cost data were collected and analyzed. Among 43 patients referred, 27 collectively attended 86 sessions. Median age of enrolled patients was 54 (IQR 49-58). Sixteen (59%) were African-American and 20 (77%) had an undetectable HIV viral load. Mean pain score at initial visit was 6.5 (SD = 1.1). The average session-level decrease was 2.6 (SD = 1.7) and patient-level decrease was 2.5 (SD = 1.2). The largest payors were Medicare managed care (28%), Medicaid (21%), and Ryan White grant-related funds (18%). When the first four months of the program are excluded to account for slow start-up, the program's monthly net revenue during the remaining five months was $163. We present preliminary data from a low-cost pilot PT program integrated into an HIV clinic in a primary care setting associated with clinically significant improvements in pain. Further investigation into the implementation of such programs is essential.

(38) Mindry DL, Crankshaw TL, Maharaj P, Munthree C, Letsoalo T, Milford C, et al. "We have to try and have this child before it is too late": missed opportunities in client-provider communication on reproductive intentions of people living with HIV. AIDS Care 2015 ;27(1):25-30

Men and women living with HIV with access to ARVs are living longer, healthier lives that can and often do include bearing children. Children occupy a key space in men and women's personal and social lives and often play a fundamental role in maintaining these relationships, irrespective of illness concerns. Couples living with HIV need to balance prevention needs and ill-health while trying to maintain healthy relationships. Health-care providers serving the reproductive needs of HIV-affected couples need to consider the social and relational factors shaping reproductive decisions associated with periconception risk behaviors. This paper based on qualitative research at three hospital sites in eThekwini District, South Africa, investigates the childbearing intentions and needs of people living with HIV (PLHIV), and the attitudes and experiences of health-care providers serving the reproductive needs of PLHIV, and client and provider views and knowledge of safer conception. This research revealed that personal, social, and relationship dynamics shape the reproductive decisions of PLHIV, and "unplanned" pregnancies are not always unintended. Additionally, conception desires are not driven by the number of living children; rather clients are motivated by whether or not they have had any children
with their current partner/spouse. Providers should consider the relationship status of clients in discussions about childbearing desires and intentions. Although many providers recognize the complex social realities shaping their clients' reproductive decisions, they have outdated information on serving their reproductive needs. Appropriate training to enable providers to better understand the relationship and social realities surrounding their clients' childbearing intentions is required and should be used as a platform for couples to work together with providers toward safer conception. The adoption of a more participatory approach should be employed to equalize client-provider power dynamics and to ensure clients are more involved in decision-making about reproduction and conception.


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.


In female-positive HIV-serodiscordant couples desiring children, home timed vaginal insemination (TVI) of semen during the fertile period along with consistent condom use may reduce the risk of HIV transmission when the man is HIV-uninfected. In sub-Saharan Africa, up to 45% of HIV-infected women desire to have more children. HIV viral load assessment is not routinely available in low-resource countries for monitoring adherence and response to antiretroviral therapy. Therefore, in these settings, timed unprotected intercourse without assurance of HIV viral
suppression may pose unnecessary risks. TVI, a simple and affordable intervention, can be considered an adjunct method and option of safer conception for HIV prevention with treatment of the HIV-infected partner and/or pre-exposure prophylaxis. We conducted five mixed and single-sex focus group discussions comprised of 33 HIV-serodiscordant couples and health-care providers in the Nyanza region of Kenya to assess the acceptability and feasibility of TVI as a safer method of conception. The transcribed data were analyzed using a grounded theory approach. We found that educating and counseling HIV-serodiscordant couples on TVI could make it an acceptable and feasible safer conception method when associated with frequent communication and home visits by health-care providers. The findings of this study indicate that implementation studies that integrate training and counseling of HIV-serodiscordant couples and health-care providers on TVI combined with consistent condom use are needed. Acknowledging and supporting the reproductive choice and needs of female positive, male negative HIV-serodiscordant couples who desire children should also include the use of assisted reproductive services at the same time as pharmaceutical options that prevent sexual HIV transmission.


BACKGROUND: Highly active antiretroviral therapy (HAART) has transformed human immunodeficiency virus infection (HIV) into a chronic condition. The effects of long-term HAART on the immune system activity of early infected children are not fully understood. Hence, the aim of this review is to investigate immune system recovery and residual alteration in HIV-infected children receiving HAART in high-income countries. METHODS: A systematic review was performed by searches of PubMed and references of the relevant articles. Studies published between January 1, 2000 and April 1, 2014 and conducted in high-income countries reporting data on immunological features in HIV-infected children receiving HAART were included in this review. RESULTS: Fifty-three articles were included in this review. Present knowledge on B-cell and T-cell function, immunoglobulin production, response to vaccine and innate immune system activity in HIV-infected children receiving HAART is discussed. CONCLUSION: Starting therapy as soon as diagnosis is ascertained and monitoring vaccine response in children under HAART are the most important tools to safeguard immunological function in HIV-infected children.


BACKGROUND: Malnourished HIV-infected African adults are at high risk of early mortality after starting antiretroviral therapy (ART). We hypothesized that short-course, high-dose vitamin and mineral supplementation in lipid nutritional supplements would decrease mortality. METHODS: The study was an individually-randomised phase III trial conducted in ART clinics in Mwanza, Tanzania, and Lusaka, Zambia. Participants were 1,815 ART-naive non-pregnant adults with body
mass index (BMI) <18.5 kg/m² who were referred for ART based on CD4 count <350 cells/μL or WHO stage 3 or 4 disease. The intervention was a lipid-based nutritional supplement either without (LNS) or with additional vitamins and minerals (LNS-VM), beginning prior to ART initiation; supplement amounts were 30 g/day (150 kcal) from recruitment until 2 weeks after starting ART and 250 g/day (1,400 kcal) from weeks 2 to 6 after starting ART. The primary outcome was mortality between recruitment and 12 weeks of ART. Secondary outcomes were serious adverse events (SAEs) and abnormal electrolytes throughout, and BMI and CD4 count at 12 weeks ART. RESULTS: Follow-up for the primary outcome was 91%. There were 181 deaths in the LNS group (83.7/100 person-years) and 184 (82.6/100 person-years) in the LNS-VM group (rate ratio (RR), 0.99; 95% CI, 0.80-1.21; P=0.89). The intervention did not affect SAEs or BMI, but decreased the incidence of low serum phosphate (RR, 0.73; 95% CI, 0.55-0.97; P=0.03) and increased the incidence of high serum potassium (RR, 1.60; 95% CI, 1.19-2.15; P=0.002) and phosphate (RR, 1.23; 95% CI, 1.10-1.37; P <0.001). Mean CD4 count at 12 weeks post-ART was 25 cells/μL (95% CI, 4-46) higher in the LNS-VM compared to the LNS arm (P=0.02). CONCLUSIONS: High-dose vitamin and mineral supplementation in LNS, compared to LNS alone, did not decrease mortality or clinical SAEs in malnourished African adults initiating ART, but improved CD4 count. The higher frequency of elevated serum potassium and phosphate levels suggests high-level electrolyte supplementation for all patients is inadvisable but the addition of micronutrient supplements to ART may provide clinical benefits in these patients. TRIAL REGISTRATION: PACTR201106000300631, registered on 1st June 2011.


This case report highlights a challenging clinical dilemma to administer antiretroviral therapy in a critically-ill human immunodeficiency virus-infected patient who presented with multiple opportunistic infections and a non-functional gastrointestinal tract. The need for parenteral antiretroviral drug options is discussed and investigational drugs are briefly reviewed. Copyright © The Author(s) 2014 Reprints and permissions: sagepub.co.uk/journalsPermissions.nav.


Depression and other health problems are common co-morbidities among persons living with human immunodeficiency virus infection/acquired immunodeficiency syndrome (HIV/AIDS). The aim of this study was to investigate depression, health status, and substance use in relation to HIV-infected and uninfected individuals in South Africa. Using a cross-sectional case-control design, we compared depression, physical health, mental health, problem alcohol use, and tobacco use in a sample of HIV-infected (N = 143) and HIV-uninfected (N = 199) respondents who had known their HIV status for two months. We found that depression was higher, and physical health and mental health were lower in HIV-positive than HIV-negative individuals. Poor physical health also moderated the
The introduction of combination antiretroviral therapy (ART) in HIV-infected children led to a dramatic reduction in HIV-related morbidity and mortality. The decision about which ART regimen to use on children and when to start the treatment needs to focus on assuring normal growth and neuropsychological development. According to the available treatment guidelines, all infants under 1 year of age with HIV should be started on an ART at diagnosis. It is difficult to balance between the benefits of providing treatment to asymptomatic children >1 year and the concerns about long-term resistance and antiretroviral drug side effects if the treatment is started too early. Current guidelines agree that the need for antiretroviral treatment among asymptomatic children >12 months depends on age-specific CD4+ T-cell count thresholds and viral loads. Recent studies showed that the introduction of combination ART during the first year of life preserves a good function of B-cell and T-cell compartments. Starting treatment earlier might have fundamental roles both in preserving the not yet depleted immune function and in preventing the progressive HIV encephalopathy. The comparison of the international guidelines available for starting HIV treatment in children in developed countries highlights a gray area. New randomized controlled studies are needed to clarify the appropriate approach in asymptomatic children between 2 and 5 years of age.

Using surveillance data, we describe the prevalence and characteristics of individuals in New York City (NYC) co-infected with human immunodeficiency virus (HIV) and hepatitis B virus (HBV) and/or hepatitis C virus (HCV). Surveillance databases including persons reported to the NYC Department of Health and Mental Hygiene with HIV, HBV, and HCV by 31 December 2010 and not known to be dead as of 1 January 2000, were matched with 2000-2011 vital statistics mortality data. Of 140 606 persons reported with HIV, 4% were co-infected with HBV only, 15% were co-infected with HCV only, and 1% were co-infected with HBV and HCV. In all groups, 70-80% were male. The most common race/ethnicity and HIV transmission risk groups were non-Hispanic blacks and men who have sex with men (MSM) for HIV/HBV infection, and non-Hispanic blacks, Hispanics, and injection drug users for HIV/HCV and HIV/HBV/HCV infections. The overall age-adjusted 2000-2011 mortality was higher in co-infected than HIV mono-infected individuals. Use of population-based surveillance data provided a comprehensive characterization of HIV co-infection with HBV and HCV. Our findings emphasize the importance of
targeting HIV and viral hepatitis testing and prevention efforts to populations at risk for co-infection, and of integrating HIV and viral hepatitis care and testing services.


OBJECTIVES: Approximately 32.7% of people living with HIV/AIDS (PLWHA) in the USA are now over the age of 50. Women comprise a significant percentage of the US HIV epidemic and the percentage of women diagnosed with HIV continues to grow; however, little is known about women's experiences living and coping with HIV over time. The goal of this study was to explore the experiences of US women over 50 living with HIV to better understand how they make sense of their diagnosis and cope with their illness over time and during the aging process. METHOD: Nineteen women (mean age = 56.79, SD = 4.63) referred from Boston-area organizations and hospitals completed one-time, in-depth individual interviews, out of which 47% of the participants were identified as Black/African Americans, and 37% as White. The average time since diagnosis was 16.32 years (SD = 5.70). Inclusion criteria included: (1) female sex, (2) aged 50 or older, (3) HIV diagnosis, and (4) English speaking. Transcribed interviews were analyzed using a grounded theory approach and NVivo 9 software. RESULTS: Findings are described across the following themes: (1) experiences at diagnosis, (2) uncertainty of disease course, (3) acceptance, and (4) living 'well' with HIV. Participants appeared to be well adjusted to their HIV diagnosis and described a progression to acceptance and survivorship; they identified strategies to 'live well' in the context of HIV. For some, health-related uncertainty about the future remained. These findings were organized into a model of coping with HIV. CONCLUSION: Themes and issues identified by this study may help guide interventions across the lifespan for women with HIV.

(48) Rajbhandari R, Danford CJ, Chung RT, Ananthakrishnan AN. HBV infection is associated with greater mortality in hospitalised patients compared to HCV infection or alcoholic liver disease. Aliment. Pharmacol. Ther. 2015 May;41(10):928-938

BACKGROUND: Little is known about outcomes of Hepatitis B virus (HBV)-related hospitalisations. AIM: To compare the characteristics and outcomes of hospitalised HBV patients to those with Hepatitis C virus (HCV) infection and alcoholic liver disease (ALD), and to examine variables associated with poor outcomes. METHODS: Using the 2011 US Nationwide Inpatient Sample, we identified hospitalised patients with HBV, HCV or ALD-related admissions using ICD-9-CM codes. We compared liver-related complications between the three groups. Multivariable regression was performed to identify factors associated with in-hospital mortality and length of stay. RESULTS: A total of 22 843 HBV, 203 300 HCV and 244 383 ALD-related discharges were included. Cirrhosis was noted less commonly in those with HBV (69.1%) compared to HCV (83.9%) or ALD (80.9%) (P < 0.001). In contrast, hepatocellular cancer and acute liver failure were more common with HBV (16.5% and 5.2%) compared to HCV (10.4% and 2.8%) or ALD (2.5% and 4.9%) respectively (P < 0.0001). On multivariable analysis, adjusting for demographics, liver and nonliver comorbidity, HBV infection was associated with higher mortality compared to HCV infection [Odds ratio (OR) 1.21, 95% CI: 1.04-1.39] or ALD (OR: 1.15, 95% CI: 1.02-1.31).
Length of hospital stay was greater with HBV compared to HCV (+0.54 days) or ALD (+0.36 days). Among those with HBV, significant factors associated with mortality included renal failure, hepatocellular cancer, respiratory failure, ascites, coagulopathy and acute liver failure. CONCLUSION: Patients hospitalised with HBV infection represent a particularly high-risk group with poor in-hospital outcomes and increased mortality compared to HCV infection or alcoholic liver disease.


BACKGROUND/AIMS: To determine the ophthalmic manifestations of HIV in a cohort of long-term survivors of perinatally acquired HIV. METHODS: Twenty-two patients with perinatally acquired HIV who were aged >12 years were prospectively studied at a university clinic. They underwent complete ophthalmic examinations and fundus photography. Their medical histories, medications and CD4 counts were abstracted from the medical records. To evaluate for keratoconjunctivitis sicca, both HIV patients and 44 healthy controls (matched by age, gender and contact lens wear) underwent Schirmer testing and ocular surface staining. RESULTS: Nine male and 13 female HIV patients with mean age of 16.6 years (SD, 3.4) were examined. Of the 22 HIV patients, 21 had been treated with highly active antiretroviral therapy (HAART). Only one patient had a CD4 count nadir of <200 cells/microL. The mean visual acuity of the eyes of the HIV subjects was 20/22 (SD, 1.6 lines). No patient had cytomegalovirus retinitis. Four of the 22 (18%) HIV patients had strabismus. HIV subjects and controls had similar rates of abnormal Schirmer (9% and 14%, p=0.62) and ocular staining scores (p=0.29). CONCLUSIONS: In the post-HAART era, long-term survivors of perinatally acquired HIV exhibited little vision-threatening disease, but had a high prevalence of strabismus. Copyright Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to


The Human Immunodeficiency Virus (HIV) belongs to the subfamily of lentiviruses that are characterized by long incubation periods and chronic, persistent infection. The virus integrates into the genome of infected CD4+ cells and, in a subpopulation of cells, adopts a transcriptionally silent state, a process referred to a viral latency. This property makes it exceedingly difficult to therapeutically target the virus and eradicate infection. If left untreated, the inexorable demise of the infected individual's immune system ensues, a causal result of Acquired Immunodeficiency Syndrome (AIDS). Latently infected cells provide a reservoir that maintains viral infection.

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indefinitely. In this chapter we explore the role of noncoding RNAs in HIV infection and in the establishment and maintenance of viral latency. Both short and long noncoding RNAs are endogenous modulators of epigenetic regulation in human cells and play an active role in gene expression. Lastly, we explore therapeutic modalities based on expressed RNAs that are capable of countering infection, transcriptionally regulating the virus, and suppressing or activating the latent state.


(53) Selvapatt N, Brown A, Thursz M. Early diagnosis and treatment: the goal of hepatitis C screening. BMJ 2015;350():h635


AIM: To research the synergistic activity by triple combinations of carbosilane dendrimers with tenofovir and maraviroc as topical microbicide. METHODS: Cytotoxicity, anti-HIV-1 activity, vaginal irritation and histological analysis of triple combinations were determined. Analysis of combined effects and the median effective concentration were performed using CalcuSyn software. RESULTS: Combinations showed a greater broad-spectrum anti-HIV-1 activity than the single-drug, and preserved this activity in acid environment or seminal fluid. The strongest combinations were G2-STE16/G2-S24P/tenofovir, G2-STE16/G2-S16/maraviroc and G2-STE16/tenofovir/maraviroc at 2:2:1, 10:10:1 10:5:1 ratios, respectively. They demonstrated strong synergistic activity profile due to the weighted average combination indices varied between 0.06 and 0.38. No irritation was detected in female BALB/c mice. CONCLUSION: The three-drug combination increases their antiviral potency and act synergistically as potential microbicide.


Over the past three decades, perinatal HIV infection in the United States has evolved from a fatal disease to a manageable chronic illness. As the majority of youth with perinatal HIV infection age into adolescence and adulthood, management of this stigmatizing, transmittable disease in the backdrop of a cadre of environmental stressors presents challenges beyond those of other chronic illnesses. The neurologic and neuropsychological consequences of this neurotropic virus have important implications for the successful navigation of responsibilities related to increasingly independent living of this aging population. This article will review the neurologic and neuropsychological consequences of perinatal HIV infection and concomitant factors in the era of highly active antiretroviral therapy and will provide an overview of the neuropathology, pathogenesis, neuroimaging findings, and treatment of perinatal HIV infection, as well as recommendations for service provision and future research.

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UNLABELLED: Liver disease complicates human immunodeficiency virus (HIV)/acquired immune deficiency syndrome; however, liver pathology data are limited, particularly from high HIV prevalence countries. We investigated the spectrum and clinicopathological correlates of liver pathology in a high HIV burden setting. In a single-center study, all HIV/acquired immune deficiency syndrome patients with complete clinical and demographic data who underwent liver biopsy were analyzed and clinicopathologically assessed by hepatologists and one of two experienced liver pathologists. We evaluated 301 patients, with a median age of 34 (interquartile range 29-40) years. Women (n=143) were younger than men (n=158), with a median age of 33 (interquartile range 28-37) versus 35 (interquartile range 31-41) years, P = 0.001. The majority, 76.1%, were black African. Median CD4 at time of biopsy was 127 (52-260) cells/mm(3) . Drug-induced liver injury was the predominant finding (42.2%), followed by granulomatous inflammation (29%), steatosis/steatohepatitis (19.3%), hepatitis B (19%), and hepatitis C coinfection (3.3%), with more than one pathology in 16.2%. With granulomatous inflammation, 52% met the criteria for tuberculosis immune reconstitution syndrome. By univariate analysis, cotrimoxazole and antiretroviral therapy conferred risk for drug injury (odds ratio [OR]=2.78 [1.72-4.48], P200 cells/mm(3) , and submassive necrosis was associated with younger age. Hepatitis B demonstrated no association.

CONCLUSION: In a high HIV burden area, drug-induced liver injury due to antiretroviral therapy and cotrimoxazole was a frequent clinicopathological finding; Mycobacterium tuberculosis was the leading opportunistic infection, with more than half of patients fulfilling criteria for tuberculosis immune reconstitution syndrome; liver biopsy remains a useful diagnostic procedure in this setting.Copyright © 2015 by the American Association for the Study of Liver Diseases.


Loneliness is common in persons living with HIV (PLWH). Lonely people smoke at higher rates than the general population, and loneliness is a likely contributor to the ongoing smoking epidemic among PLWH. We explored factors associated with loneliness in a cohort of 272 PLWH smokers enrolled in two separate tobacco treatment trials. Loneliness was independently associated with lack of a spouse or partner, lower educational attainment, "other or unknown" HIV exposure category, depression, anxiety, recent alcohol consumption, and higher daily cigarette consumption. Referral to group therapy reduced loneliness, whereas referral to an individual web-based tobacco treatment did not.

(58) Stock PG, Terrault NA. Human immunodeficiency virus and liver transplantation: Hepatitis C is the last hurdle. Hepatology 2015 May;61(5):1747-1754

OBJECTIVES/HYPOTHESIS: To describe clinical characteristics of oral mucoceles/ranulas, with a focus on human immunodeficiency virus (HIV)-related salivary gland diseases. STUDY DESIGN: A descriptive and clinical study, with review of patient data. MATERIAL AND METHODS: We reviewed 113 referred cases of oral mucocele. The following anatomical sites were identified: lip, tongue, and floor of the mouth (simple ranulas), as well as plunging ranulas. The age and gender data of the patients with oral mucoceles were recorded. The HIV status of the patients and other information were reviewed. RESULTS: There were 30 (26.5%) males and 83 (73.5%) females. Most patients were below 30 years of age, with the peak frequency in the first and second decade. Ranula (simple and plunging) represented 84.1% of the mucocele locations. Mucocele on the lips represented 10.6%. Seventy-two (63.7%) patients were HIV positive; and 97.2% of them had ranulas. Thirty-eight (33.6%) patients presented with plunging ranulas; and 92.1% of them were HIV positive, compared with two patients presenting with plunging ranulas in the HIV-negative group. These results strongly suggest that an HIV-positive patient is statistically (P < 0.001) more at risk of presenting with not only a simple, but also a plunging ranula type. CONCLUSION: This study presents a different clinical picture of oral mucoceles/ranulas, as observed in HIV-positive patients. Additionally, it suggests a possible clinical link between the two pathologies. The authors strongly support the suggestion that oral mucocele/ranula is an HIV-related salivary gland disease. LEVEL OF EVIDENCE: 4. Copyright © 2014 The American Laryngological, Rhinological and Otological Society, Inc.


Liver cancers are one of the deadliest known malignancies which are increasingly becoming a major public health problem in both developed and developing countries. Overwhelming evidence suggests a strong role of infection with hepatitis B and C virus (HBV and HCV), alcohol abuse, as well as metabolic diseases such as obesity and diabetes either individually or synergistically to cause or exacerbate the development of liver cancers. Although numerous etiologic mechanisms for liver cancer development have been advanced and well characterized, the lack of definite curative treatments means that gaps in knowledge still exist in identifying key molecular mechanisms and pathways in the pathophysiology of liver cancers. Given the limited success with current therapies and preventive strategies against liver cancer, there is an urgent need to identify new therapeutic options for patients. Targeting HCV and or alcohol-induced signal transduction, or virus-host protein interactions may offer novel therapies for liver cancer. This review summarizes current knowledge on the mechanistic development of liver cancer associated with HCV infection and alcohol abuse as well as highlights potential novel therapeutic strategies.


In recent years, efforts to reduce HIV transmission have begun to incorporate a
structural interventions approach, whereby the social, political, and economic environment in which people live is considered an important determinant of individual behaviors. This approach to HIV prevention is reflected in the growing number of programs designed to address insecure or nonexistent property rights for women living in developing countries. Qualitative and anecdotal evidence suggests that property ownership may allow women to mitigate social, economic, and biological effects of HIV for themselves and others through increased food security and income generation. Even so, the relationship between women’s property and inheritance rights (WPIR) and HIV transmission behaviors is not well understood. We explored sources of data that could be used to establish quantitative links between WPIR and HIV. Our search for quantitative evidence included (1) a review of peer-reviewed and "gray" literature reporting on quantitative associations between WPIR and HIV, (2) identification and assessment of existing data-sets for their utility in exploring this relationship, and (3) interviews with organizations addressing women’s property rights in Kenya and Uganda about the data they collect. We found no quantitative studies linking insecure WPIR to HIV transmission behaviors. Data-sets with relevant variables were scarce, and those with both WPIR and HIV variables could only provide superficial evidence of associations. Organizations addressing WPIR in Kenya and Uganda did not collect data that could shed light on the connection between WPIR and HIV, but the two had data and community networks that could provide a good foundation for a future study that would include the collection of additional information. Collaboration between groups addressing WPIR and HIV transmission could provide the quantitative evidence needed to determine whether and how a WPIR structural intervention could decrease HIV transmission.


Past research suggests that as many as 50% of onward human immunodeficiency virus (HIV) transmissions occur during acute and recent HIV infection. It is clearly important to develop interventions which focus on this highly infectious stage of HIV infection to prevent further transmission in the risk networks of acutely and recently infected individuals. Project Protect tries to find recently and acutely infected individuals and prevents HIV transmission in their risk networks. Participants are recruited by community health outreach workers at community-based HIV testing sites and drug users' community venues, by coupon referrals and through referrals from AIDS clinics. When a network with acute/recent infection is identified, network members are interviewed about their risky behaviors, network information is collected, and blood is drawn for HIV testing. Participants are also educated and given prevention materials (condoms, syringes, educational materials); HIV-infected participants are referred to AIDS clinics and are assisted with access to care. Community alerts about elevated risk of HIV transmission are distributed within the risk networks of recently infected. Overall, 342 people were recruited to the project and screened for acute/recent HIV infection. Only six index cases of recent infection (2.3% of all people screened) were found through primary screening at voluntary counseling and testing (VCT) sites, but six cases of recent infection were found through contact tracing of these recently infected participants (7% of network members who came to the interview). Combining screening at VCT sites and contact...
tracing the number of recently infected people we located as compared to VCT screening alone. No adverse events were encountered. These first results provide evidence for the theory behind the intervention, i.e., in the risk networks of recently infected people there are other people with recent HIV infection and they can be successfully located without increasing stigma for project participants.


Hepatitis C virus (HCV) is a leading cause of chronic hepatitis and infects approximately three to four million people per year, about 170 million infected people in total, making it one of the major global health problems. In a minority of cases HCV is cleared spontaneously, but in most of the infected individuals infection progresses to a chronic state associated with high risk to develop liver cirrhosis, hepatocellular cancer, or liver failure. The treatment of HCV infection has evolved over the years. Interferon (IFN)-alpha in combination with ribavirin has been used for decades as standard therapy. More recently, a new standard-of-care treatment has been approved based on a triple combination with either HCV protease inhibitor telaprevir or boceprevir. In addition, various options for all-oral, IFN-free regimens are currently being evaluated. Despite substantial improvement of sustained virological response rates, some intrinsic limitations of these new direct-acting antivirals, including serious side effects, the risk of resistance development and high cost, urge the development of alternative or additional therapeutic strategies. Gene therapy represents a feasible alternative treatment. Small RNA technology, including RNA interference (RNAi) techniques and antisense approaches, is one of the potentially promising ways to investigate viral and host cell factors that are involved in HCV infection and replication. With this, newly developed gene therapy regimens will be provided to treat HCV. In this chapter, a comprehensive overview guides you through the current developments and applications of RNAi and microRNA-based gene therapy strategies in HCV treatment.

(64) Wallis E, Thornhill J, Saunders J, Orkin C. Introducing opt-out HIV testing in an acute medical admissions unit: does it improve testing uptake in those with lobar pneumonia?. Sex.Transm.Infect. 2015 May;91(3):153

(65) Ward CJ, Lee V. Hepatitis C screening of men who have sex with men. BMJ 2015;350( ):h642


Understanding barriers to accepting HIV-prevention counseling among vulnerable populations is of critical importance, as prevention efforts can only have a public health impact if high-risk populations are willing to enroll. A correlational field study was conducted in a health care setting with a high-risk community sample (N=350) to determine if number of sex partners and alcohol consumption predict acceptance of an invitation to take part in HIV-prevention counseling. Findings indicated that participants engaging in the least risky behavior (i.e. individuals reporting no alcohol
consumption and few sex partners) were more likely to accept an offer to receive HIV-prevention counseling. Moreover, heavy drinking was associated with decreased exposure to HIV-prevention counseling, regardless of the number of sex partners reported (b=.12, p>.05). Given associations between heavy drinking and sexual risk taking, finding ways to increase exposure to HIV-prevention counseling programs among heavy drinkers could serve a vital public health function.


(68) Wise J. Study supports link between injectable hormonal contraceptive and HIV risk. BMJ 2015;350( ):h112

(69) Xia Q, Kobrak P, Wiewel EW, Torian LV. The high proportion of late HIV diagnoses in the USA is likely to stay: findings from a mathematical model. AIDS Care 2015;27(2):206-212

A static model of undiagnosed and diagnosed HIV infections by year of infection and year of diagnosis was constructed to examine the impact of changes in HIV case-finding and HIV incidence on the proportion of late diagnoses. With no changes in HIV case-finding or incidence, the proportion of late diagnoses in the USA would remain stable at the 2010 level, 32.0%; with a 10% increase in HIV case-finding and no changes in HIV incidence, the estimated proportion of late diagnoses would steadily decrease to 28.1% in 2019; with a 5% annual increase in HIV incidence and no changes in case-finding, the proportion would decrease to 25.2% in 2019; with a 5% annual decrease in HIV incidence and no change in case-finding, the proportion would steadily increase to 33.2% in 2019; with a 10% increase in HIV case-finding, accompanied by a 5% annual decrease in HIV incidence, the proportion would decrease from 32.0% to 30.3% in 2011, and then steadily increase to 35.2% in 2019. In all five scenarios, the proportion of late diagnoses would remain stable after 2019. The stability of the proportion is explained by the definition of the measure itself, as both the numerator and denominator are affected by HIV case-finding making the measure less sensitive. For this reason, we should cautiously interpret the proportion of late diagnoses as a marker of the success or failure of expanding HIV testing programs.


There are approximately 1.2 million people living with HIV/AIDS (PLWHA) in the USA. Each year, there are roughly 50,000 new HIV diagnoses. The World Health Organization Commission on Social Determinants of Health (CSDH) identified several social determinants of health and health inequity (SDH) including childcare, education, employment, gender equality, health insurance, housing, and income. The CSDH also noted the significant impact the SDH can have on advocacy for social change, social interventions to reduce HIV prevalence, and health monitoring. The current analysis evaluated the predictive ability of five SDH for HIV and AIDS incidence on the state level. The SDH used in the analysis were education, employment, housing, income, and insurance; other SDH were not included because
reliable and appropriate state-level data were not available. The results of multiple regression analyses indicate that the use of these five SDH create statistically significant models predicting HIV incidence (adjusted $R(2) = .54$) and AIDS incidence (adjusted $R(2) = .37$) and account for a sizable portion of the variance for each. Stepwise variable selection reduced the necessary SDH to two: (1) education and (2) housing. These models are also statistically significant and account for a notable portion of variance in HIV incidence (adjusted $R(2) = .55$) and AIDS incidence (adjusted $R(2) = .40$). These outcomes demonstrate that state-level SDH, particularly education and housing, offer significant explanatory power regarding HIV and AIDS incidence rates. Congruent with the recommendations of the CSDH, the results of the current analysis suggest that state-sponsored policy and social interventions should consider and target SDH, especially education and housing, in attempts to reduce HIV and AIDS incidence rates.

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