Conclusions. Overall, FQHCs served the CDC target baby boomer population age group. Findings show Hepatitis C treatment can be successfully undertaken at FQHCs including difficult to treat populations such as PWID. The SVR viral load shows efficacy of treatment at both FQHCs.

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2231. Long-Term Immunogenicity of Four Doses and Four Double Doses vs. Standard Doses of Hepatitis B Vaccination in HIV-Infected Adults: An Expansion of a Randomized Controlled Trial

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Background. Previous studies showed that the response rate to standard hepatitis B (HepB) vaccination schedule among HIV-infected patients ranged between 33.3 and 65% due to an impaired response. However, we have reported that the response rate was not different from four doses and four double doses schedule. This study followed those patients for at least 3 years to evaluate the efficacy of the three regimens.

Methods. From February 4, 2011 to May 4, 2012, 132 HIV-infected adults who had CD4+ cell counts >200 cells/μL, undetectable plasma HIV-1 RNA, and were negative for all hepatitis B virus markers were 1:1:1 randomly assigned to receive one of three recombinant vaccine (Hepavax-Gene Bierna, Bence) regimens: 20 μg IM at months 0, 1, and 6 (standard doses group, n = 44), 40 μg IM at Months 0, 1, 2, and 6 (four double doses group, n = 44), or 40 μg IM at Month 0, 1, 2, and 6 (four double doses group, n = 44). Between January 2015 and January 2016, 126 participants were evaluated; 42 in the “standard doses” group, 43 in the “four doses” group, and 41 in the “four double doses” group.

Results. At a median duration of 49.6 months (range 40.6, 53.7) after vaccine regimen completion, the percentages of responders with anti-HBs 20 μIU/mL were 57.1% (95% CI, 41.5–72.8%) in the Standard doses group; 76.7% (95% CI 63.8–89.9%) in the Four doses group (P = 0.067); and 80.5% (95% CI 77.8–92.0%) in the Four double doses group (P = 0.033 vs. the standard dose group). Factor associated with a responder was vaccination schedule (either four standard doses or four double doses) and younger age.

Conclusions. Despite highly effective standard HBV vaccination schedule at 6 months after completion of vaccine regimen, long-term immunogenicity was lower than the four double doses regimen among HIV-infected adults with CD4+ cell counts >200 cells/mm3 and undetectable plasma HIV-1 RNA.

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2232. Zinc deficiency and advanced liver fibrosis among HIV/HCV co-infected persons in Russia

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Background. Liver disease in people living with HIV (PLWH) co-infected with hepatitis C virus (HCV) is a common cause of non-AIDS-related death in Russia. HIV accelerates liver fibrosis in the setting of HCV co-infection thus PLWH have increased risk of hepatitis-related cancers, hepatocellular carcinoma, and liver-related mortality. Injection drug use is common among Russian PLWH and zinc deficiency is common among PLWH and people who inject drugs. We hypothesize that zinc deficiency facilitates the underlying mechanisms of liver fibrosis. We investigated the association between zinc deficiency and advanced liver fibrosis (ALF) in a cohort of HIV/HCV co-infected persons in Russia.

Methods. Anti-retroviral naive HIV-infected Russians with a recent history of heavy drinking were recruited into a clinical trial of zinc supplementation. A subset of participants (N = 204) were HCV co-infected (qualitative HCV RNA positive) at baseline. The primary dependent variable in this cross-sectional study was advanced liver fibrosis defined as either (1) FIB-4 >3.25, (2) FIB-4 ≥4.15 or ≥3.25 with elastography suggestive of ALF (≥20.5 kPa), or (3) APRI ≥2.5. Zinc deficiency, the main independent variable, measured at baseline, was defined as <0.75 mg/L for the primary analysis. In secondary analyses, zinc level was categorized into tertiles. Analyses were conducted using multivariable logistic regression adjusted for potential confounders: demographics including BMI, HCV-related factors, and substance use including alcohol and cocaine.

Results. Participant characteristics were: 33 years [median age]; 25% female; 25% with ALF; and 42% injection drug use in the past 30 days. Among those with zinc deficiency (N = 65) compared with those with normal zinc levels (n = 139), the prevalence of ALF was similar (27.7% vs. 23.0%, respectively). We did not detect an association between zinc deficiency and ALF in the adjusted regression model (aOR: 1.28, 95% CI: 0.62–2.61, P = 0.61). No significant association between zinc deficiency and ALF was found in secondary analyses. Of the covariates, CD4 count <350 cells/μL was significantly associated with ALF (aOR: 2.2, 95% CI: 1.05–4.62, P = 0.04).

Conclusions. In this cohort of HIV/HCV co-infected Russians, we did not detect an association between zinc deficiency or zinc levels and advanced liver fibrosis.

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2233. Hepatitis C Eradication: Who Is Being Left Behind in the HIV Population?

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Background. HCV treatment has increased since direct-acting antivirals became available. HCV clinics are scaling up treatment to eradicate HCV. Little is known about HIV patients and access to HCV treatment.

Methods. We retrospectively analyzed all HIV/HCV co-infected patients within our safety-net hospital system who received outpatient care in our HCV clinics from November 1, 2015 to October 31, 2017. Data were abstracted on demographics, insurance, HCV RNA, drug use, homelessness, and number of visits. No visits for >1 year was lost to care and missed visits was missing >1 primary care visit. We examined the association of these variables to risk of having a detectable HCV RNA (surrogate marker for HCV treatment) through multivariate logistic regression.

Results. We identified 914 with HIV/HCV (72% male, 55% Black, 35% Medicaid, 29% Medicare, 16% Ryan White), 25% homeless of which 47% were heterosexual, 36% MSM, and 14% IDU. HCV was undetectable in 74%, 69% were between age 46 and 65, 17% had active alcohol use and 33% had drug use. HCV RNA was available for 868 and was detected in (57%). Whites and Hispanics compared with Blacks were less likely to have detectable HCV RNA. Detectable HCV RNA was more likely in those >50 years of age compared with <40 years, with detectable HIV viral load, >1 missed visit, and lost to care.

Conclusion. We found that those at risk for not being treated for HCV were Blacks, older patients and those not engaged in HIV care or not suppressed on HIV treatment. To achieve HCV eradication will require efforts to engage older patients, Blacks, those noncompliant with ART, and not engaged in HIV care.
2235. A Collaborative Drug Therapy Management Model for the Treatment of Hepatitis C Virus (HCV) in an Urban Clinic
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Background. Direct-acting antivirals (DAAs) have changed the paradigm of HCV treatment due to high-sustained virologic response (SVR) rates and minimal adverse events. Prior authorizations, complex treatment criteria, and inadequate clinical staff to meet demands of screening efforts may prevent access to treatment. Recent literature suggests that pharmacist involvement in HCV treatment can optimize care. We present a clinic protocol with collaborative drug therapy management to alleviate HCV treatment burdens.
Methods. A retrospective review of patients referred and evaluated for HCV treatment between February 2014 and April 2018 at the Ruth M. Rothstein CORE Center. Exclusion was no SVR12 data. Demographic data along with HCV RNA at Week 4, end of treatment, and 12 weeks thereafter were collected.
Results. Of 682 treatment referrals, 76 patients were denied or ineligible, two referred to study, and six not treated (lost to care, incarceration, or death). Of the 598 patients treated, complete data were available for 430. Of the remaining 168 patients, 73% have upcoming appts, 26% lost to follow-up, and 2% died. Mean age was 57.6 years (range 22-82), 70.5% male, 67% black, 17.2% Hispanic, 12.8% White. 203 were (47.2%) HCV/HIV co-infected. Majority were treatment naive (86.3%) and cirrhotic (42.1%) with a median Fibro Scan of 13 (range 3–75). Most patients received ledipasvir/sofosbuvir (70%). Overall SVR rate was 93.5% (402/430); HIV co-infected patients 94.6% (192/203) and mono-infected patients 88.3% (210/243). Of the 402 patients treated, 87% (352/402) achieved SVR12. For patients who have not completed treatment, SVR rates are higher (93.5%) than those who did not complete treatment (88%).
Conclusion. A collaborative approach in HCV treatment allows us to overcome adherence barriers such as health literacy, medication acquisition issues, and drug interactions, as well as increase clinic productivity. A retrospective study may not capture all pharmacist interventions that prevent lapses in therapy such as frequent pharmacy calls and insurance resolution. However, this study shows that with an established clinic protocol and support of a multi-disciplinary team, high SVR rates are maintained, even in the large proportion of cirrhotic patients in our cohort. A clinic referrals continue to grow, additional staff may further support organizational work flow.

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2236. Direct-Acting Antivirals: Efficacy in a Real-World, Urban, Underserved, HIV-HCV Co-Infected Population
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Background. Clinical trials demonstrated high sustained virologic response (SVR) rates for HIV-HCV co-infected patients treated for HCV with direct-acting antivirals (DAAs). SVR data for real-world cohorts are increasingly available, yet limited in underserved populations. Individual and systematic barriers can limit treatment success in underserved patient populations.
Methods. Investigators performed a retrospective cohort study of HIV-HCV co-infected adult patients treated with DAAs in a hepatology clinic and an infectious disease clinic network within an urban, academic medical center from February 2, 2014 to March 13, 2018. Patients were treated by multidisciplinary teams including clinical pharmacists. DAA selection was based on the American Association for the Study of Liver Disease and Infectious Diseases Society of America HCV Guidance and the patient's insurance formulary at the time of treatment. For DAA-experienced patients, results from the most recent DAA course were included. The primary outcome was SVR at 12 weeks after HCV treatment completion. Descriptive statistics were utilized to analyze data.
Results. Seventy-one patients started HCV treatment. SVR data were available for 62 patients. Of those, the majority were Black (68%), genotype 1a (76%), cirrhotic (50%), HCV treatment-naive (66%), on HIV antiretrovirals (97%), and insured through Medicare or Medicaid (66%). Mean age was 59 (±8) years. Ledipasvir/sofosbuvir (LDV/SOF) was the most commonly used DAA regimen (65%). Overall SVR rate for all regimens was 94% (58/62 patients). SVR by DAA regimen was 75% for LDV/SOF + ribavirin (3/4), 93% for LDV/SOF (37/40), and 100% for simeprevir + sofosbuvir (6/6), sofosbuvir/velpatasvir (4/4), and sofosbuvir + ribavirin (2/2). The four treatment failures were cirrhotic patients with genotype 1a or 1b; three were treatment-naive and one was DAA-experienced.