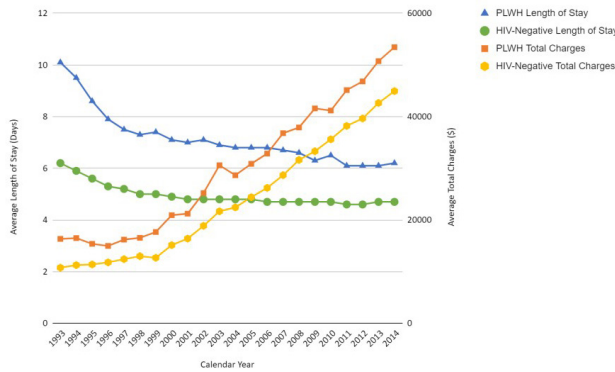


Figure 3. Trends of Length of Hospital Admission and Total Charges for PLWH and HIV-Negative Patients from 1993 – 2014



Conclusion. The primary admission diagnoses for PLWH has shifted from HIV to non-communicable causes as PLWH are living longer. PLWH are typically younger on admission and have longer and more expensive hospitalizations than HIV-negative patients.

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949. Use of Optical Coherence Tomography Angiography to Assess Microvascular Health Among Persons with HIV: Employing the Retina as a Convenient Window

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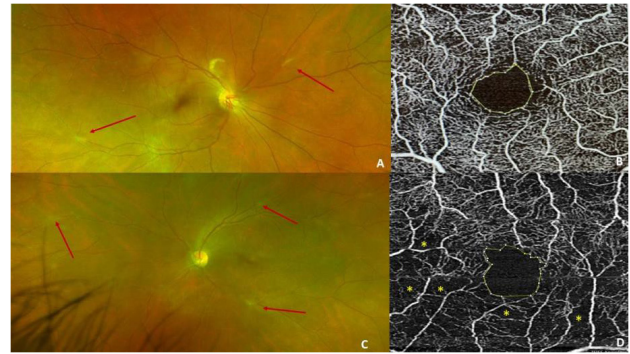
Background. Mechanisms underlying the rising burden of non-AIDS comorbidities (NACM) among persons with HIV (PWH) remain unclear. Microvasculopathy may link HIV-related chronic inflammation and premature multimorbidity, similar to diabetes and other conditions characterized by inflammatory end-organ damage. We used a novel retinovascular imaging tool, optical coherence tomography angiography (OCTA), to evaluate the retina as a convenient assessment of microvascular health among PWH.

Methods. Data from 4 PWH who underwent OCTA (Zeiss CIRRUSTM HD-OCT 5000) at the Emory Eye Center from 2018-2020 were analyzed. Demographics, HIV-specific indices and NACM were summarized at the time of OCTA. Images were reviewed qualitatively and metrics of microvascular health – the foveal avascular zone (FAZ) area and vessel density (VD) from the superficial capillary plexus (SCP) – were calculated by ImageJ.

Results. The median age was 39 years, 100% were male, 100% were black, 25% had ever smoked, and median body mass index was 25.4 kg/m². Median time since HIV diagnosis was 19 years, all patients had a history of clinical AIDS, including 2 with prior cytomegalovirus retinitis. Median current CD4 count was 84 cells/mm³, 100% were prescribed antiretroviral therapy and 50% had HIV viral suppression. Prevalent NACM included (each n=1): hypertension, dyslipidemia, diabetes, chronic kidney disease and asthma.

Qualitatively, all 7 of the eyes evaluated by OCTA had evidence of microvascular pathology: 2 eyes demonstrated diffuse capillary nonperfusion, while the remaining 5 eyes had focal areas of nonperfusion around the FAZ. Mean FAZ area was 0.31 (SD±0.10) mm² and mean VD of the SCP was 43.9% (SD±10.9%). Retinovascular pathology identified by funduscopy and OCTA is shown in the figure.

Figure. Retinal imaging of a PWH with bilateral retinal vasculitis. Fundus photos of the right (A) and left (C) eyes show retinal vasculitis highlighted by the red arrows. OCTA of the right (B) and left (D) maculae (3X3 scan Zeiss AngioplexTM) show the FAZ areas outlined in yellow, both of irregular contour. OCTA of the left macula demonstrates areas of significant flow voids marked by the asterisks and the FAZ area is enlarged.



Conclusion. Among patients with longstanding HIV, OCTA identified microvascular abnormalities in all retinæ examined. Retinovascular evaluation by OCTA is a feasible, non-invasive technique for assessing microvascular health and findings support additional study in a larger, more diverse group of PWH. Screening tools targeting microvasculopathy among PWH may aid in earlier detection of those at greatest risk of NACM and allow for aggressive risk-modification strategies.

Disclosures. All Authors: No reported disclosures

950. Venous Thromboembolism in Persons Living with HIV (PLWH): A Single Center Retrospective Cohort Study

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Session: P-44. HIV: Complications and Special Populations

Background. Data on risk of thromboembolism in PLWH is limited. HIV is often recognized as a chronic inflammatory disease and has been recognized as a pro-thrombotic condition. We aimed to analyze the incidence and demographic of venous thromboembolism such as pulmonary embolism and deep vein thrombosis in PLWH admitted to our hospital.

Methods. We conducted a retrospective hospital cohort study on PLWH ≥ 18 years old who were admitted to our hospital between 09/01/2018 and 09/01/2019. Study individuals were recruited if they had complete laboratory profile and well-defined clinical outcomes. Demographic, clinical and laboratory data were reviewed and retrieved. Descriptive analysis was employed to describe the demographic profile of PLWH with venous thromboembolism.

Results. Out of the 192 hospitalized PLWH during the study period, 15 (8%) patients had documented deep vein thrombosis (DVT) and/or pulmonary embolism (PE). History of DVT/PE was present in 5 (33%) patients while the rest had new onset of DVT/PE. Out of the 15 patients, 4 (27%) had DVT and PE, 4 (27%) had only DVT and 7 (46%) had only PE. The median age was 57 years, ranged from 40 to 74 years; 4 males and 11 females. As for ethnicities, 2 Caucasian, 12 were African American and 1 Hispanic.

The average D-dimer was 4491. The median CD4 count for PLWH with venous thromboembolism was 487 and a median viral load of 900. In contrary, the median CD4 count of PLWH without venous thromboembolism was 420 and median viral load of 140. Though not statistically significance, higher viral load seems to associate with risk of venous thromboembolism. Surprisingly, female gender is an independent risk factor for venous thromboembolism in PLWH (z-score 2.75, p=0.0059; odds ratio [OR], 4.67; 95% confidence interval [CI], 1.56-13.69).

Conclusion. Our observation of PLWH with venous thromboembolism suggest that this population has an increased risk of venous thromboembolism as compared to general population. Female gender is an independent risk factor for venous thromboembolism in PLWH and higher HIV viral load seems to associate with higher risk. Larger prospective studies in this population are needed to dissect the interplay between HIV and venous thromboembolism.

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951. Weight Gain Associated With Antiretroviral Therapy

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Session: P-44. HIV: Complications and Special Populations

Background. Obesity is a global public health crisis with a growing prevalence in persons with human immunodeficiency virus (PWH) population. In this study, we aimed to investigate factors associated with weight gain in the PWH population.

Methods. This was a single-centered, retrospective cohort study of our clinic patient population from January 1, 2015 to January 1, 2019. Patients with human immunodeficiency virus (HIV) were identified from the electronic health record and a randomized sample of 300 patients who had at least two follow up appointments, were on antiretroviral therapy, and had viral loads less than 200 were evaluated. The primary outcome was weight change over follow up. Cox Proportional Hazards models were used, taking a weight gain > 3 kg as the outcome, and the time on therapy between visits as the time to event. Robust linear regression was used to model mean changes in weight, accounting for influential observations. All analysis were performed in STATA 16.0.

Table 1

	Univariate model		Multivariate model	
	Difference ± SE (kg)	p-value	Difference ± SE (kg)	p-value
Male gender	1.38 ± 0.61	0.024	1.89 ± 0.61	0.002
Marijuana use	-4.20 ± 1.63	0.01	-4.74 ± 1.55	0.002
Darunavir use	-1.36 ± 0.57	0.016	-1.10 ± 0.55	0.046
Rilpivirine use	1.69 ± 0.69	0.014	1.97 ± 0.66	0.003
Etravirine use	-3.62 ± 1.50	0.016	-3.08 ± 1.43	0.032
Bictegravir use	4.54 ± 2.11	0.032	4.57 ± 2.01	0.024
White race	-0.77 ± 0.44	0.10	-1.18 ± 0.43	0.007

Results. At baseline, 87% were male, 63% were white, and 65% were overweight/obese. 30% were on a protease inhibitor, 46% were on non-nucleoside reverse transcriptase inhibitor, and 37% were on an integrase inhibitor. 64% were on Tenofovir disoproxil (TDF), 8% were on Tenofovir alafenamide (TAF), and 19% were on Abacavir. Mean weight change over follow up was significantly increased at 1.31 kg (95% CI = 0.58 - 2.04 kg, p = 0.0004). TAF use and male gender were significantly associated with risk of weight gain > 3 kg in univariate analysis [respectively, OR = 2.53, 95% CI = 1.30 - 4.92, p = 0.006; OR = 2.60, 95% CI = 1.05 - 6.45, p = 0.04]. In multivariate analysis, TAF use was significantly associated with weight gain > 3 kg, while male gender was of borderline significance [respectively, OR = 2.29, 95% CI = 1.17 - 4.47, p = 0.01; OR = 2.40, 95% CI = 0.96 - 5.97, p = 0.06]. Significant factors associated with weight change are noted in Table 1.

Conclusion. As PWH are living longer on effective ARV therapy, monitoring for weight gain is required as obesity contributes to morbidity and mortality from cardiovascular disease and metabolic diseases. Key factors for weight gain in our clinic population include male gender, baseline diagnosis of hypertension, use of TAF, bictegravir use, and rilpivirine use.

Disclosures. Carlos Malvestutto, MD, Gilead Sciences (Advisor or Review Panel member) ViiV Healthcare (Advisor or Review Panel member)

952. Weight-Gain in Treatment Naive Newly Diagnosed HIV-Infected Persons After Initiation on Integrase Strand Inhibitor Based Treatment Regimens

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Session: P-44. HIV: Complications and Special Populations

Background. We performed a retrospective cohort study of treatment-naive patients with newly diagnosed HIV-infection enrolled at an urban university specialty clinic to identify whether INSTI-based ART regimens were associated with greater weight gain compared to NNRTI and PI based regimens in the first 12-18 months of treatment. The secondary aim of this study was to determine differences in weight gain between males and females within each of the three ART classes

Methods. Differences in weight change and BMI change were compared across ART class using nonparametric tests, specifically the Wilcoxon rank sum test. Nonparametric tests were also used to compare differences in weight change and BMI change between males and females within each ART class. Data were analyzed using R Core Team, 2020

Results. Among the 348 individuals included in the study, 73% were African American and 79% were male and the median age was 32 years. There were 155 individuals initiating therapy on NNRTI based regimens (44%), 58 were on PI based regimens (17%) and 135 were on INSTI regimens (39%). The median weight at baseline was 170.5 lbs. and the median body mass index was 25.4 kg/m². Median weight increased

across all 3 ART regimens within the first 12-18 months of treatment. Median weight gain among the PI group was the greatest, at 6.8 lbs. (p = 0.04). Median weight gain among the NNRTI group was the lowest, .88 lbs (p < .01). Median weight gain among those on INSTI based regimens was 4.8 lbs. (p = 0.11). Among those on INSTI-based regimens, women had a greater median increase in weight compared to men, 10.1 lbs. compared to 3.2 lbs.. (p = 0.046).

Conclusion. Overall, among individuals initiating HIV treatment those initiating PI based regimens experienced the most weight gain and individuals initiating INSTI based regimens did not experience a significant weight gain. Women on INSTI based regimens did experience a significant weight gain in comparison to men.. More research is needed to elucidate specific ART regimens' causal role in weight gain and to identify risk factors for ART-associated weight gain.

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953. Frailty Among People Living with HIV In Miami, A Cross

Sectional Pilot Study

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Session: P-45. HIV: Epidemiology and Screening

Background. Frailty, a status of high vulnerability, is a clinical syndrome associated with adverse health outcomes and characterized by a constellation of various health deficits. Although age is a major contributor of being frail, HIV infection is associated with accelerated aging, and likely contributes to frailty. This association has seldom been evaluated. This study evaluated factors associated with frailty among PWH in Miami.

Methods. Cross-sectional study. Adults (> 18 years), HIV infected (HIV+) and uninfected (HIV-), virologically suppressed for at least 1 year (< 50 copies/ml). Sociodemographic factors and the self reported FRAIL scale was administered (Fatigue, Resistance or ability to climb a single flight of stairs, Ambulation or ability to walk one block, Illnesses or non-HIV associated comorbidities, and more than 5% weight Loss in the previous year). Groups were categorized base on the FRAIL scale scoring as Non-Frail (0), Pre-Frail (1-2), and Frail (3 or more). The association by Frail categories were analyze using descriptive statistics and ordinal logistical regression.

Results. N (40), median age was 43 years (SD 20.6); 35% White; 20% Hispanic; 52% females; 25 (62.5%) HIV +/ 15 (37.5%) HIV -. A small number of participants reported use of tobacco 2 (5%) and alcohol 7 (18%). More than half of the participants were frail or pre-frail (18 or 45% Non-Frail, 18 or 45% Pre-Frail, and 4 or 10% Frail, and HIV+ were more likely to be pre-frail or frail than HIV-, 72% vs 26%, p = 0.019). Frail scale symptoms were common among all participants but HIV+ reported higher fatigue than HIV- (85% vs 14%, p = 0.01). On Regression analysis, both HIV status and age were significant predictors of frailty status (HIV χ^2 (1) = 4.36, p = .037 and age χ^2 (1) = 13.48, p < .001). When controlling for age, being HIV - on average reduced frailty by an odds of 2.16 (b = -2.164, SE = 1.04, p = .037, 95% CI [-4.2 -0.13]). When controlling for HIV status, for every one year of increase in age, the ordered log odds of being frail increased by 0.07 (b = 0.07, SE = 0.02, p < .001, 95% CI [0.03 0.11]).

Conclusion. Using the FRAIL scale, a simple tool to screen for frailty, we identified high prevalence of frailty among PWH. Further studies are needed to identify the best tools to assess frailty and prevent poor health outcomes among this vulnerable population.

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954. Missed opportunities for HIV Screening in the Emergency Department

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Session: P-45. HIV: Epidemiology and Screening

Background. There are 1.14 million people infected with human immunodeficiency virus (HIV) in the United States, and only about 86% are diagnosed. HIV diagnosis is the first step to care and expanded testing is essential to reduce transmission. Individuals with undiagnosed HIV have a transmission rate 3.5 times higher than those aware of their infection. Individuals seeking testing and treatment for sexually transmitted infections (STIs) represent a higher risk population for HIV infection. Despite revised Centers for Disease Control and Prevention (CDC) recommendations to expand HIV testing in healthcare settings, testing remains low. A significant obstacle to expanded testing, especially in emergency departments (EDs), is concern about ensuring appropriate HIV test tracking and follow-up.

Methods. We performed a retrospective chart review of patients presenting with symptoms of an STI between January 1, 2015 and July 8, 2019 at eight Beaumont Health EDs in Southeast Michigan. De-identified data was collected from the electronic health record (EHR) for patients aged 10 and older who had testing for one or more STIs including gonorrhea, syphilis, and chlamydia. Patients were evaluated for concurrent HIV testing during the encounter, and patients known to be HIV infected were excluded.

Results. Of 32,640 encounters during which patients not known to be HIV infected were tested for STIs, only 68 (0.21%) included HIV antibody/antigen