investigate the prevalence of chronic comorbidities and the use of co-medications in HIV-positive patients in Japan.

Methods. This longitudinal cohort study retrospectively analyzed clinical information from HIV-positive patients using antiretroviral therapy (ART) between April 2009 and April 2019. Demographic characteristics, numbers and types of chronic comorbidities and numbers and types of co-medications, were described by age groups. This is the first report to analyze comorbidities and the polypharmacy of all patients in the cross-sectional National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB), which contains data on the largest number of HIV-positive patients in Japan, available to date.

Results. Overall, 28,089 HIV-positive patients (male 91·9%) who used ART were identified. About 40% of 28,089 patients had at least one chronic comorbidity. The number of acquired immunodeficiency syndrome (AIDS)-defining cancers and non-AIDS-defining cancers in this Japanese cohort was 2,432 (8·7%) and 2,485 (8·8%), respectively. The incidence of AIDS-defining cancers was 6·4% for non-Hodgkin lymphoma and 2·5% for Kaposi's sarcoma, with bronchus or lung cancer being the most common of the non-AIDS-defining cancers. Syphilis was the most common infection (47·2%). The cumulative burden of vascular disease and AIDS-free cancer increased with age. The most common therapeutic categories of co-medications were systemic antibacterials (42%) and antacids, antiflatulents and antiulcerants (38·8%). Most of the patients used at least one co-medication (71·4%), and the numbers of co-medications used were greater in the older age groups.

Conclusion. The burden of chronic comorbidities and co-medication were found to be greater in older than younger patients, among 28,089 HIV-positive patients in a nationwide study in Japan. This finding suggests the need to identify elderly persons living with HIV and to appropriately manage their HIV and comorbidities.

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825. Immunosuppressive Agent Use in Patients with Comorbid HIV and Inflammatory Bowel Disease

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Session: P-46. HIV: Complications and Co-infections

Background. Epidemiologic data from HIV/AIDS registries and inflammatory bowel disease (IBD) centers have identified comorbid IBD to be a challenge in the long-term care of patients with HIV, but data on management are sparse. At a multisite tertiary center, we examined medical management, disease control, and complications of patients with comorbid HIV and IBD.

Methods. We reviewed 126 charts between April 2017 and December 2020 for subjects 18+ years with HIV-1 infection and Crohn's disease (CD) or ulcerative colitis (UC). Participants received HIV and/or IBD care at Jefferson. We documented CD4 count, HIV viral load, IBD regimen, and the Harvey-Bradshaw Index (HBI) for CD and the Mayo Score for UC (DAI).

Results. Twelve patients met criteria for inclusion, n=6 with CD and n=6 with UC. They were all prescribed antiretroviral therapy (ART), with median CD4 722 and 83% virally suppressed (Table 1). 67% had ever been prescribed immunosuppressive IBD regimens while known to be HIV+. Eight patients had CD4s > 200 with low HBI or DAI. Patient #s 4, 8 and 10 were managed with only mesalamine. Patient #s 5 and 12 had received immunomodulators, with #5 controlled on azathioprine for years but stopped following admission for septic shock due to a thigh abscess, and #12 newly trialed methotrexate in the setting of IBD-related arthritis. Patient #s 2, 6, and 7 were treated with adalimumab: #2 newly for IBD-related arthritis, while #6 and #7 had been maintained long-term for luminal disease, but #7 was a new HIV diagnosis recently initiated on ART. Two patients were AIDS-defined with low HBI: #1 on mesalamine only, as infliximab was discontinued on HIV diagnosis with CD4 36, and #9 who was not on an IBD regimen. Two patients CD4 200+ had inconsistent viral suppression and moderate HBI/DAI: #3, who had responded to vedolizumab prescribed briefly during viral suppression but stopped due to poor follow-up and ART non-adherence, and #11, whose only documented IBD regimen since HIV diagnosis was chronic prednisone.

Table 1. Cohort Background and Currently Prescribed Regimens

#	Patient	IBD	IBD Regimen	Mean CD4 [cells/MCL]	Prescribed HIV Regimen	Viral Suppression?	Present HBI/DAI
1	57M; White	CD	mesalamine	244 AIDS-defined: candida esophagitis	bictegravir-emtricitabine-TAF	Yes	HBI 5 (4 pts well-being)
2	52M; White, Hispanic	UC	adalimumab	816	dolutegravir-lamivudine	Yes	DAI 2
3	40M; Black	UC	mesalamine	481	bictegravir-emtricitabine-TAF	No	DAI 5
4	54M; White	UC	mesalamine	699	elvitegravir-cobicistat-emtricitabine-TAF	Yes	DAI 0
5	68M; White	UC	none	836	elvitegravir-cobicistat-emtricitabine- TAF	Yes	DAI 0
6	48F; White	CD	adalimumab	960	dolutegravir, TAF-emtricitabine	Yes	HBI 0
7	31F; Black	CD	adalimumab	720	bictegravir-emtricitabine-TAF	Yes	HBI 0
8	74M; Black	CD	mesalamine	517	raltegravir, etravirine, ritonavir, darunavir + weekly TDF	Yes	HBI 5 (4 pts poor well-being)
9	40M; White	CD	none	294 AIDS-defined: Kaposi's sarcoma	bictegravir-emtricitabine-TAF	No	HBI 4 (4 pts poor well-being; ostomy)
10	69M; Black	UC	mesalamine	723	elvitegravir-cobicistat-emtricitabine- TAF	Yes (2018-2020)	DAI 2
11	58F; White	CD	prednisone 10mg daily	422	bictegravir-emtricitabine-TAF	Yes (2019-2020)	HBI 13 (ostomy)
12	69F; Black	UC	mesalamine, methotrexate	1062	atazanavir-cobicistat, TAF-emtricitabine	Yes	DAI 4

These data observe the cohort's current regimens and longitudinal control. They do not include windows of prior medication trials that were not maintained, which are detailed in the text.

Conclusion. This small case series suggests that comorbid IBD and HIV patients may be managed successfully with immunosuppressive therapy when indicated. More information is needed regarding whether immunomodulators and biologics may affect CD4 and viral loads and conversely how poor control of HIV affects IBD activity.

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826. HIV Infection and HPV Genotype Patterns among Young Women with Advanced Cervical Neoplasia in Davidson County, Tennessee

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Session: P-46. HIV: Complications and Co-infections

Background. Women living with HIV (WLWH) experience high rates of human papillomavirus (HPV) infection and increased risk of cervical cancer. High-risk HPV (HR-HPV) types 16/18 cause most cervical precancers and cancers in women with and without HIV. However, contributions of other HR-HPV types to cervical disease among WLWH are not fully understood. We compared CIN2+ cases (cervical intraepithelial neoplasia grade 2 or higher or adenocarcinoma in situ) and the association between non-16/18 HPV types among women with and without HIV.

Methods. Davidson County, Tennessee, women aged 18-39 years with CIN2+ diagnosed between 2008-2016 with HPV genotyping were included. HIV status, demographics, and histology were abstracted from medical records. Neighborhood-level socioeconomic factors were derived from *Integrated Public Use Microdata Series.* Archived cervical tissue was tested for 37 HPV types to define CIN2+ cases negative for HPV 16/18, regardless of presence of other HR-HPV strains. Characteristics of women with CIN2+ and HPV typing patterns were compared between women with and without HIV using Wilcoxon and Chi-square tests. Logistic regression assessed the association of non-16/18 HPV types and HIV infection, adjusting for age, race, calendar year, insurance, HPV vaccination, and neighborhood socioeconomic factors (selected a priori).

Results. Among 2,116 women included, 1,093 (52%) had neither HPV16 nor HPV18. Compared to women without HIV, the 27 WLWH included were more likely to be >30 years of age, Black race, and live in neighborhoods with higher measures of poverty (Table 1). HPV types did not statistically differ by HIV status, though WLWH had a higher number of HR-HPV types present (Table 2). HIV infection was not significantly associated with non-16/18 HPV type after adjusting for confounders (adjusted OR 0.86 [95%CI: 0.4-1.88]).

Table 1. Characteristics at CIN2+ diagnosis by HIV status

	Women living with HIV (n=27)	Women without HIV (n=2,089)	*P value*[a]
Age in years, median (IQR)	31.0 (25.5-35.5)	28.0 (25.0-32.0)	0.073
Race/ethnicity, n (%)			0.021
Non-Hispanic White	12 (44)	1,258 (60)	
Non-Hispanic Black	13 (48)	481 (23)	
Hispanic ethnicity	1 (4)	159 (8)	
Other/Unknown	1 (4)	191 (9)	
Primary insurance status n (%)			<0.001
Public	22 (81)	743 (36)	
Private	5 (19)	1,223 (59)	
Uninsured	0 (0)	26 (1)	
Missing	0 (0)	97 (5)	
Neighborhood income, median (IQR)	$47,411 (36,394-62,886)	$56,811 (43,429-71,593)	0.026
Neighborhood prevalence (%) living below poverty level	0.21 (0.15-0.26)	0.15 (0.09-0.24)	0.005
Any HPV vaccine n (%)			0.006
Received	7 (26)	431 (21)	
Not received	10 (37)	341 (16)	
Missing	10 (37)	1,317 (63)	

[a] Wilcoxon test or Chi-square tests for comparisons, as appropriate

Table 2. HPV types[a] by HIV status

	Women living with HIV (n=27)	Women without HIV (n=2,089)	*P value*[b]
Number of high-risk HPV types detected, n (%)			0.003
0	0 (0)	87 (4)	
1	18 (67)	1673 (80)	
2	5 (19)	264 (13)	
≥3	4 (15)	65 (3)	
HPV 16 or 18 detected, n (%)	14 (52)	1,009 (48)	0.714
HPV type Groups, n (%)			0.193
16/18	8 (30)	804 (38)	
16/18 and other HR types	6 (22)	205 (10)	
Other HR	11 (41)	887 (42)	
Only low risk types	2 (7)	106 (5)	
No HPV detected	0 (0)	87 (4)	

[a] High Risk HPV types: HPV 16/18/31/33/35/39/45/51/52/56/58/59/66/68. Low Risk HPV types: HPV 6/11/26/34/40/42/53/54/55/61/62/64/67/69/70/71/72/73/74/81/82/83/84/89

[b] Chi-square test for comparisons

Conclusion. Among women with CIN2+, HIV infection was not significantly associated with non-16/18 HPV types. However, WLWH had a higher number of high-risk HPV types detected. Our study was limited by the small number of WLWH included.

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827. High KSHV Seroprevalence Among MSM with HIV Associated with Oral Intercourse and Methamphetamine Use in the Southern United States

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Session: P-46. HIV: Complications and Co-infections

Background. Despite a decrease in Kaposi's sarcoma (KS) cases in much of the US, the incidence of KS and associated mortality is increasing in specific subpopulations, particularly young, African American men in the South. To further understand this disparity, we sought to describe the seroprevalence and risk factors associated with Kaposi's sarcoma herpesvirus (KSHV) among men who have sex with men (MSM) and transgender women (TGW) with HIV in Dallas, Texas.

Methods. We enrolled MSM and TGW with HIV and without known KSHV-related disease from a large urban safety-net clinic in Dallas. Blood samples were collected from participants for IgG testing (K8.1 and ORF73), followed by KSHV PCR on blood and saliva samples for those with positive IgG results. We also collected demographics, sexual history, sexual practices, HIV history, substance use, and insurance status. Multivariate logistic regression modeling was performed to identify associations with KSHV seropositivity.

Results. Of 159 participants, 110 (69.2%) were seropositive for KSHV. Seroprevalence varied by race/ethnicity, with 27/34 (79.4%) Hispanic, 27/37 (73.0%) white, and 54/84 (64.3%) black participants testing positive for KSHV IgG, though this difference was not statistically significant. 31/104 (29.8%) seropositive participants had detectable KSHV in saliva and 10/104 (9.6%) seropositive participants had detectable KSHV in blood. Risk factors independently associated with KSHV seropositivity include oral-anal sex (OR 4.02, 95% CI 1.89 – 8.54), oral-penile sex (OR 3.66, 95% CI 1.16 – 11.57), and methamphetamine use (OR 2.73, 95% CI 1.23 – 6.04). Current CD4 count, HIV viral load, history of intravenous drug use, tobacco or alcohol use were not associated with KSHV seropositivity.

Table 1. Patient Characteristics

	KSHV Seronegative (N=49)	KSHV Seropositive (N=110)	P-value
Age (median)	51	44	0.23
CD4 (median)	555	484	0.75
HIV Viral Load (median)	29	19	0.94
Race/Ethnicity			0.28
White	10 (20.4%)	27 (24.6%)	
Black	30 (61.2%)	54 (49.1%)	
Hispanic	7 (14.3%)	27 (24.6%)	
Other	2 (4.1%)	2 (1.8%)	
IVDU	12 (30.0%)	29 (31.5%)	0.85
Drug use			
Meth	13 (26.5%)	59 (53.6%)	<0.01
Cocaine	30 (61.2%)	61 (55.5%)	0.50
Heroin	3 (6.1%)	17 (15.5%)	0.10
Sex practices			
Oral-anal	20 (40.8%)	85 (77.3%)	<0.01
Oral-penile	39 (79.6%)	104 (94.6%)	<0.01
Anal, insertive	34 (69.4%)	97 (88.2%)	<0.01
Anal, receptive	36 (73.5%)	96 (87.3%)	0.03
Vaginal	24 (49.0%)	49 (44.6%)	0.60

Conclusion. We found that over two-thirds of MSM and TGW with HIV in Dallas are KSHV seropositive, which is relatively high compared to other studies of US MSM with HIV (30-70%). In our study, KSHV was more common among Hispanic and white individuals, and was associated with higher rates of oral sex and methamphetamine use. Differences in KSHV seroprevalence alone are unlikely to explain racial disparities in the incidence of KS. Further study is needed to better understand drivers of KSHV infection and KSHV-related diseases in highly impacted groups in the US.

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828. Short- and Long-Term Metabolic Changes in Virologically Suppressed Patients Switching from TDF to TAF Containing Antiretroviral Therapy

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Session: P-46. HIV: Complications and Co-infections

Background. Switching from tenofovir disoproxil fumarate (TDF) to tenofovir alafenamide (TAF) containing antiretroviral therapy (ART) may negatively influence weight, cholesterol, and atherosclerotic cardiovascular disease (ASCVD) risk. The timing, duration, and extent of these changes and their definitive associations with TAF remain unclear.

Methods. This retrospective observational study evaluated weight, body mass index (BMI), cholesterol, and ASCVD risk score changes in virologically suppressed patients living with HIV infection (PLWH) who switched from TDF to TAF without switching any other ART regimen components. Adult patients on TDF and no HIV viral load values > 200 copies/mL for ≥ 2 years prior to and following a TAF switch were included. Body weight, BMI, cholesterol and other variables were collected for the 2 years before and after the switch. The Wilcoxon signed-rank test compared median values for each measurement pre and post switch in a univariate analysis. Longitudinal linear mixed effects models evaluated changes for each outcome measure at 1 and 2 years after the switch. Models were built with random effects for patients and included covariates such as time on TAF, age, sex, race, time with HIV, diabetes, smoking status, and concomitant medications associated with weight gain or loss.

Results. A total of 86 patients met study criteria (table 1). In the univariate analysis, there were significant increases in weight, BMI, total cholesterol, LDL, HDL, triglycerides, and ASCVD risk scores 2 years after switching to TAF (each $p \leq 0.05$, table 2). However, after controlling for covariates, only the increases in total and LDL cholesterol were associated with switching to TAF and significantly different from expected changes predicted in the linear model. In terms of weight gain with TAF, patients gained an average of 4.3 pounds in year 1 and 3.8 pounds in year 2 after the switch. Neither of these increases were statistically different from the expected changes in weight predicted in the linear model (3.1 pounds/year, 95% CI: 1.6-4.6).

Table 1. Descriptive Summary of Patient Characteristics, n = 86.

		All (n=86)	Min	Max
Age at switch, mean (SD), min max		47.1 (11.3)	23.0	75.0
Sex, n(%)	Female	28 (32.6)		
	Male	58 (67.4)		
Race, n (%)	White	29 (33.7)		
	African American	48 (55.8)		
	Hispanic	5 (5.8)		
	Asian	4 (4.7)		
Height (in), mean (SD), min max		68.2 (4.0)	58.0	76.0
Time with HIV (years), median (IQR), min, max[1]		11.0 (7.5, 16.5)	2.0	32.0
Time on ART (years), median (IQR), min, max[2]		8.0 (6.0, 12.0)	2.0	25.0
# of previous ART regimens, median (IQR), min, max[3]		1.0 (1.0, 2.0)	1.0	7.0
Pre-switch CD4 count, median (IQR), min, max[3]		659.0 (535.0, 923.0)	145.0	6981.0
Other ART (Yes), n (%)	Integrase	43 (50.0)		
	Protease	16 (18.6)		
	NNRTI	32 (37.2)		
	Other	0 (0.0)		

[1] There are 2 (2.3%) missing.
[2] There are 7 (8.1%) missing.
[3] There are 5 (5.8%) missing.