69. Incidence of metabolic complications among treatment-naïve adults living with HIV-1 randomized to B/F/TAF, DTG/ABC/3TC or DTG+F/TAF after 144 Weeks

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Session: O-15. HIV Co-infections and Co-morbidities

Background. Metabolic comorbidities including diabetes (DM) and dyslipidemia pose challenges to the long-term care of people with HIV (PHW). Incidence of cardiovascular disease and DM are reported at higher rates in PHW than the general population. Obesity is broadly prevalent in both the general population and PHW, and higher body mass index (BMI) can contribute to metabolic complications. Here we present longer-term follow up on incidence of DM, hypertension (HTN), BMI categorical shifts, and lipid changes over 144 weeks of blinded treatment from two trials of PHW initiating antiretroviral therapy.

Methods. We assessed incidence of metabolic complications in adult PHW in Study 1489: bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) vs dolutegravir/cyclosporine/abacavir/ lamivudine (DTG/ABC/3TC) and Study 1490: B/F/TAF vs DTG+F/TAF. Treatment-emergent (TE) metabolic comorbidities were defined by standard MedDRA searches. CDC-defined BMI categories were compared from baseline (BL) to Week 144. Analyses by sex at birth and race were performed, as well as for lipid changes.

Results. Among 1,274 total participants, median (range) age was 33 years (18-77), 90% men, 33% black. In study 1489, BL prevalence of DM and HTN was 4.5 and 12.1%, respectively. In study 1490, BL prevalence of DM and HTN was 6.8 and 18.8%, respectively. In both studies, BMI change from baseline to week 144 was small (Table 1) with median BMI change from 26.1 kg/m² to 26.1 kg/m² in study 1489, and from 26.2 kg/m² to 26.2 kg/m² in study 1490. The BMI shift from Normal to Obese: B/F/TAF 0%, DTG/ABC/3TC 3.2%, p=0.12 (1489) (Table 1); B/F/TAF 2.5%, DTG+F/TAF 2.9% p=1.00 (1490) (Table 2). Table 2 shows the shift of BMI category at Week 144 by baseline BMI category – Overall. Through over 144 weeks of follow up, PHW randomized to B/F/TAF, DTG/ABC/3TC or DTG+F/TAF had low rates of incident DM or HTN-related EEs, with no statistically significant differences by treatment group. BMI changes/categorical shifts from BL did not significantly differ by regimen, and no clinically significant change or difference by regimen in lipids were observed. While data are limited by three years of follow up, they are strengthened by randomized study design of three widely used initial ART regimens.

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70. Changes in Invasive Pneumococcal Disease among Adults Living with HIV: Pre- and Post-Following Introduction of 13-Valent Pneumococcal Conjugate Vaccine, 2008–2018

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Session: O-15. HIV Co-infections and Co-morbidities

Background. People living with HIV (PLHIV) are at increased risk of invasive pneumococcal disease (IPD). The 13-valent pneumococcal conjugate vaccine (PCV13) was recommended for children in 2010, and for immunocompromised adults (including PLHIV) in series with 23-valent polysaccharide vaccine (PPSV23) in 2012. We evaluated changes in IPD incidence in adults 219 years old by HIV status after PCV13 introduction and proportion of remaining IPD due to serotypes included in the 15-valent (PCV15) and 20-valent (PCV20) conjugate vaccines expected to be licensed in 2021.

Methods. IPD cases were identified through CDC’s Active Bacterial Core surveillance (ABCs). HIV status was obtained from medical records. Isolates were serotyped by Quellung reaction, or whole-genome sequencing and grouped into PCV13-types, PPV11-types (unique to PPSV23), or non-vaccine types. We estimated IPD incidence (cases per 100,000 people) using national projections of ABCs cases as numerators and national case-based HIV surveillance (PLHIV) or US census data (non-PLHIV) as denominators. We compared IPD incidence in 2011–12 and 2017–18 to pre-PCV13 baseline (2008–09) by serotype groups. We assessed the proportion of IPD due to serotypes included in PCV15 and PCV20.

Results. Overall IPD incidence at baseline was 306.7 for PLHIV and 15.2 for non-PLHIV, 50.2% of cases from baseline. Among PCV13-type IPD incidence declined in PLHIV (40.3%), 95% CI: 47.7, 32.3% and non-PLHIV (28.2%, 95% CI: 30.9, 25.5%). The largest reductions were in PCV13-type IPD during both periods (-44.2% for PLHIV and -42.2% for non-PLHIV in 2011–12; 72.5% for PLHIV and -62.2% for non-PLHIV in 2017–18) compared to baseline (Figures 1, 2). In 2017–18, overall IPD and PCV13-type rates were 16.8 (95% CI: 15.1, 18.5) and 12.6 (95% CI: 9.9, 15.3) times as high in
PLHIV vs non-PLHIV, respectively; PCV13, PCV15/non-PCV13, and PCV20/non-PCV15 serotypes comprised 21.5%, 11.2% and 16.5% of IPD in PLHIV.

IPD incidence rates among adults aged ≥19 years old by serotype group in PLHIV, 2008–2018

Conclusion. IPD rates declined significantly in both PLHIV and non-PLHIV during the study period due to reductions in PCV13-type IPD; however, IPD rates remained 17-fold higher in PLHIV compared to non-PLHIV, mainly due to non-PCV13 types. Higher-valent pneumococcal conjugate vaccines provide opportunities to reduce some of the remaining IPD burden in PLHIV.

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71. Increasing Trends in Multimorbidity and Polypharmacy Over a 5-Year Period in People Living with HIV in the United States
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72. Massive Weight Gain in People with HIV (PWHA) Starting Initial Antiretroviral Therapy (ART): Risk Factors and Predictive Ability of Early Weight Gain
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Session: O-15. HIV Co-infections and Co-morbidities

Background. Advances in antiretroviral therapies (ART) have resulted in people living with HIV (PLWHA) living longer with higher risk for age-related comorbid conditions and polypharmacy. The aim of this study was to describe trends in comorbidity and comedication burden in PLWHA over a 5-year time period.

Methods. A retrospective analysis of commercial and Medicare Advantage enrollees from the Optum Research Database was conducted. Annual cohorts of PLWHA were constructed for each calendar year from 2014-2018 and included adults (≥18 years) with 2 or more claims from pharmacy/medical claims in the 90-days prior to index using National Drug Codes. Charlson Comorbidity Index (CCI) was computed excluding HIV/AIDS. P-for-trend values accounting for clustering by patients across calendar years were assessed.

Results. Overall, 14,222 - 20,249 PLWHA who were enrolled in commercial (80.7%–81.8%) or Medicare Advantage (19.3%–18.2%) plans were identified in 2014 - 2018 calendar years. Notable trends in demographics of PLWHA were observed across years, including increases in mean age (48.9 to 52.4 years), proportion of females (17.2% to 20.3%) and Black race (25.9% to 29.0%), all p-trend<0.001. Mean CCI scores increased across years (0.72 to 0.93), p-trend<0.001. Multimorbidity (≥2 non-HIV conditions) and polypharmacy (≥5 non-ART medications) prevalence increased over 5 years (Figure 1). Hypertension, hyperlipidemia, neuropsychiatric conditions and Type 2 diabetes mellitus were the most prevalent comorbid conditions with statistically significant upward trends in prevalence across years (Figure 1).

Conclusion. Multimorbidity and polypharmacy are common in PLWHA and have been increasing in prevalence over the past 5 years. Study findings highlight the importance of an individualized approach to care for a diverse PLWHA population, in order to minimize drug-drug interactions and adverse events and thereby improve patient outcomes.

Figure 1. Comorbidity and Comedication Trends by Index Year among People Living with HIV

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