Vaccinations Among Long-Acting Injectable Versus Daily Oral Antiretroviral Therapy Users in the OPERA Cohort

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Background

- People living with HIV may face serious complications after acquiring vaccine-preventable diseases

Objective

To compare vaccine uptake among individuals receiving CAB+RPV LA versus oral ART in the OPERA® cohort

Methods

Study Population

- OPERA cohort: US-based, prospectively captured clinical data from EHRs
- Inclusion criteria
  - Treatment-experienced adults with HIV
  - Suppressed (VL <50 copies/mL)
  - Initiated **CAB+RPV LA** injections or new **oral ART** between 21JAN2021 and 30JUN2022

Study Design

- Each initiator of **CAB+RPV LA** injections was matched to 1-3 initiators of new **oral ART** on age (18-29, 30-49, 50-64, ≥65), sex (male, female), and location (same state within healthcare system)
- Baseline: Start date of ART regimen
- Matched groups followed until the first of:
  - Regimen discontinuation
    - **CAB+RPV LA**: >69 days (monthly) or >127 days (every 2 months) without injection or switch to oral ART
    - **Oral ART**: >45 days without oral ART or switch to CAB+RPV LA
  - Loss to follow-up
  - Death
  - End of Study (30JUN2023)
- Descriptive analysis: Proportions of people receiving vaccines were calculated

Results

Table 1. Baseline characteristics

n (%) or median (IQR)	CAB+RPV LA n = 730	Oral ART n = 2,178
Age, years	40 (33, 53)	42 (33, 53)
Female sex	117 (16)	348 (16)
Black race	289 (40)	869 (40)
Hispanic ethnicity	207 (28)	594 (27)
US geographic region South	421 (58)	1,275 (59)
Years since HIV diagnosis	7 (4, 14)	8 (4, 16)

Figure 1. Influenza, meningococcal, and Tdap/Td vaccinations among CAB+RPV LA and oral ART users

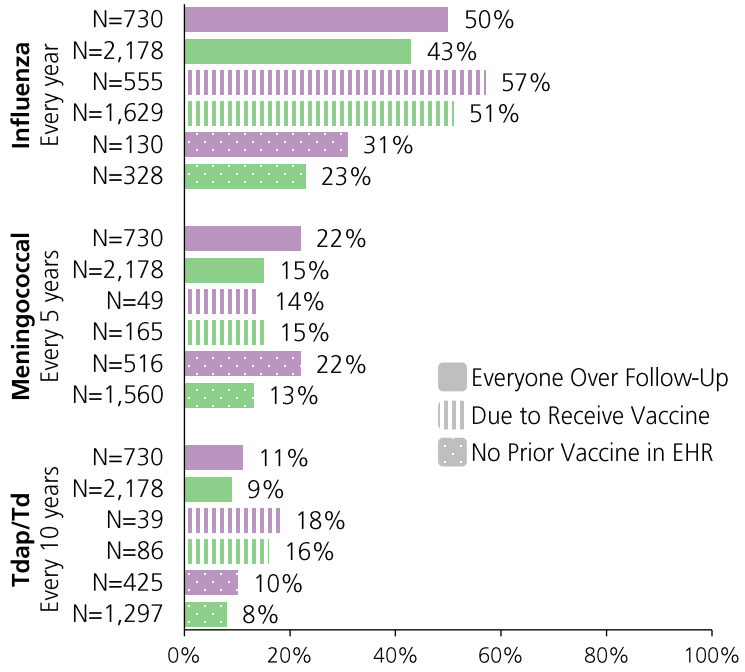

Figure 2. Pneumococcal vaccinations among unvaccinated

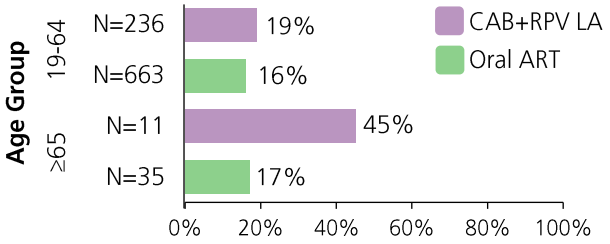

Table 2. HPV vaccinations

n (%)	CAB+RPV LA n = 730	Oral ART n = 2,178
18-45 years old	466 (64)	1,277 (59)
No prior vaccine	392 (84)	1,055 (83)
Received vaccine	32 (8)	62 (6)
18-26 years old	46 (10)	131 (10)
No prior vaccine	34 (74)	91 (69)
Received vaccine	≤5[a] (15)	11 (12)
27-45 years old	420 (90)	1,146 (90)
No prior vaccine	358 (85)	964 (84)
Received vaccine	27 (8)	51 (5)

[a] HIPAA regulations require masking of cells with 1-5 individuals

Table 3. Hepatitis and shingles vaccinations

n (%)	CAB+RPV LA n = 730	Oral ART n = 2,178
Not immune to **HAV**[a]	155 (21)	489 (22)
Received vaccine	10 (6)	20 (4)
Not immune to **HBV**[a]	105 (14)	376 (17)
Received vaccine	9 (9)	33 (9)
No prior recombinant **shingles** vaccination	656 (90)	2,019 (93)
Received vaccine	70 (11)	125 (6)

[a] No evidence of prior/current infection or prior vaccination

Abbreviations
ART, antiretroviral therapy; **CAB+RPV LA**, cabotegravir plus rilpivirine long-acting; **EHR**, electronic health record; **HAV**, hepatitis A virus; **HBV**, hepatitis B virus; **HIV**, human immunodeficiency virus; **HPV**, human papilloma virus; **IQR**, interquartile range; **Tdap/Td**, tetanus/diphtheria/pertussis; **US**, United States; **VL**, viral load

Discussion

- The ART groups were comparable (**Table 1**)
- Vaccination over follow-up was greater among **CAB+RPV LA** than **oral ART** users:
  - Among those due for the influenza vaccine (**Fig 1**; striped boxes)
  - Among those without prior influenza or meningococcal vaccines (**Fig 1**; dotted boxes)
  - Among those without a prior recombinant shingles vaccine (**Table 3**)
- Pneumococcal vaccination was similar between ART groups among people aged 19-64 years but higher among the LA (45%) than oral (17%) ART users aged ≥65 years (**Fig 2**); however, sample size is small, and results should be cautiously interpreted
- HPV vaccine uptake was suboptimal both prior to and over follow-up; results were similar between ART groups, but uptake was higher among the younger age group (**Table 2**)
- Immunity to HAV and HBV was high (>75%) while vaccine uptake was low (<10%) (**Table 3**)

Key Findings

- Vaccine uptake was generally suboptimal, but trended higher among CAB+RPV LA than oral ART users
- Providers could take better advantage of more frequent interactions with individuals receiving LA ART, which may lead to more comprehensive HIV care

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