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Session: **CS3**: Saturday May 2 – 15:00:17:00 – Antiretroviral Therapy and Resistence

Track:	Clinical Sciences
Subject:	Complications of Antiretroviral Therapy
Presentation Type:	Oral
Title of Abstract:	**Declining Prevalence of Drug Interactions Between Antiretroviral and Other Drugs in Antiretroviral Therapy (ART)-Treated Persons in British Columbia (BC), 2010-2016**
Authors and Affiliations:	Katherine J. Lepik[1, 2], Sidhant Guliani[1], Lu Wang[1], Marianne Harris[1], Linda Akagi[2], Junine Toy[1, 2], Paul Sereda[1], Viviane D. Lima[1], Julio S. Montaner[1], Rolando Barrios[1] 1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, Canada, 2. Pharmacy Department, St Paul's Hospital, Vancouver, BC, Canada

Abstract

Background: Drug interactions (DI) between antiretroviral (ARV) and non-ARV ("ARV+Other") medications are potentially harmful. This observational study sought to characterize possible changes in prevalence of ARV+Other drug DIs over time, during a period of evolving ART prescribing patterns.

Methods: Linked health administrative data were obtained from BC's Seek and Treat for Optimal Prevention of HIV/AIDS (STOP-HIV/AIDS) population-based cohort. HIV-1-infected adults (≥19 years) were included in each calendar year they received ART, between 01-Jan-2010 and 31-Dec-2016. Co-prescribed ARV+Other drug combinations were identified from prescription data, and DIs assessed using HIV DI databases (see Table footnote). The annual proportion of persons with ≥1 "Caution" or "Avoid" DI was calculated for all ART-treated persons, and for ARV class-specific DIs. Trends in DI prevalence over time were tested by generalized linear mixed models, adjusted for age and sex.

Results: In total, 9035 persons were included. Table 1 shows demographics, ARV use, and DIs by year. From 2010 to 2016, prevalence of any ARV+Other drug DI declined from 76% to 61% ($p<0.001$) and "avoid" DIs declined from 4.9% to 2.8% ($p<0.001$). Within ARV classes, DI prevalence was highest for PIs and hepatic enzyme-inducing NNRTIs (>60%) and lowest for unboosted INSTIs (11%). The downward trend in overall prevalence of ARV+Other drug DIs mirrored an observed prescribing shift from PIs and NNRTIs towards unboosted INSTIs (see Table).

Conclusions: Although prevalence of ARV+Other drug DIs has declined in recent years, DIs of potential clinical importance affect more than half of ART-treated persons annually; therefore, monitoring remains important.

Demographic Characteristics, Antiretroviral (ARV) Usage and Drug Interaction (DI) Prevalence 2010-2016 (showing three representative years).

Variable	2010	2013	2016
Population Characteristics, n (% N-All ART treated)			
N-All ART-treated	5949	6944	7585
Age, median (Q1-Q3) years	47 (41-53)	48 (41-55)	50 (42-57)

Biological sex, male	4976 (84)	5758 (83)	6299 (83)
≥1 Other co-prescribed drug	5272 (89)	6122 (88)	6519 (86)
Overall prevalence of ARV+Other Drug Interactions (% of N-All ART-treated)			
≥1 Caution or Avoid DI	4494 (76)	4962 (71)	4648 (61)*
≥1 Avoid DI	294 (4.9)	250 (3.6)	211 (2.8)*
Distinct ARV+Other drug DI, median (Q1-Q3), among persons with any DI	3 (2-5)	3 (1-5)	2 (1-4)*
Prevalence of class-specific ARV+Other drug interactions (DI), for commonly prescribed ARV classes			
Boosted PI, (% of N-All)	3547 (60)	3821 (55)	3492 (46)
Any DI (% of Boosted PI)	*2801 (79)*	*2990 (78)*	*2571 (74)*
Unboosted PI, (% of N-All)	221 (4)	254 (4)	186 (3)
Any DI (% of Unboosted PI)	*151 (68)*	*178 (70)*	*122 (66)*
NNRTI-Inducer, (% of N-All)	2685 (45)	2914 (42)	2275 (30)
Any DI (% of NNRTI-Inducer)	*1731 (64)*	*1787 (61)*	*1355 (60)*
NNRTI-Rilpivirine (% of N-All)	0	271 (4)	300 (4)
Any DI (% of NNRTI-Rilpivirine)	-	*34 (13)*	*56 (19)*
Boosted INSTI, (% of N-All)	0	136 (2)	674 (9)
Any DI (% of Boosted INSTI)	-	*59 (43)*	*392 (58)*
Unboosted INSTI, (% of N-All)	643 (11)	1050 (15)	2460 (32)
Any DI (% of Unboosted INSTI)	*67 (10)*	*117 (11)*	*273 (11)*

N-All ART-treated, number of persons receiving Antiretroviral Therapy in that year; **Other drug**, co-prescribed non-ARV medication; **Caution or Avoid DI**, ARV+Other drug interaction with "Caution" or "Avoid" classification, assessed by HIV clinicians based on University of Liverpool and Toronto General Hospital HIV DI databases; **Any DI**, ≥1 Caution or Avoid DI; **Boosted PI**, ritonavir or cobicistat-boosted Protease Inhibitor (atazanavir, darunavir, lopinavir, fosamprenavir, indinavir, saquinavir, tipranavir); **Unboosted PI**, atazanavir, nelfinavir; **NNRTI-Inducer**, Non-Nucleoside Reverse Transcriptase Inhibitors which induce hepatic enzymes (efavirenz, nevirapine, etravirine); **Boosted INSTI**, boosted Integrase Strand Transfer Inhibitor (elvitegravir-cobicistat); **Unboosted INSTI**, dolutegravir, raltegravir. ***Declining trend** 2010-2016, $p<0.001$, tested by generalized linear mixed models, adjusted for age and sex, using data from all years.