Correlates of Opioid and Benzodiazepine Co-Prescription Among People Living with HIV in British Columbia

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Background

- **Co-prescription of opioids and benzodiazepines** is associated with a number of adverse health outcomes, including respiratory depression and overdose risk
- **People living with HIV** (PLWH) experience comorbidities that may require the use of both opioids and benzodiazepines
- Some PLWH may be **at higher risk of the health harms** associated with the co-prescribing of these medications

Objective

The objective of this study was to establish the prevalence of concurrent opioid and benzodiazepine co-prescription and determine factors associated with this practice

Methods

- We utilized the Seek and Treat for Optimal Prevention HIV/AIDS in British Columbia (**STOP HIV/AIDS) cohort**, a provincial-level linkage of a series of surveillance, laboratory and administrative databases of all identified PLHIV in British Columbia between April 1996 and February 2015
- Main outcome variable: **opioid or benzodiazepine prescription**, alone or together, derived from PharmaNet
- Main explanatory variables considered: **Sex, age, depression, anxiety, substance use disorder, Charlson comorbidity index, CD4 cell count, and viral load**
- Unadjusted and adjusted generalized estimating equation (GEE) models to **determine patient factors** associated with opioid and benzodiazepine co-prescription

Results

- **14 484** participants, 19% female, median age at study baseline 38 (Q1-Q3: 31-45)
- **26%** (3835) co-prescribed opioids and benzodiazepines at least once during the study period
- **11 days** co-prescription duration at baseline (median; Q1-Q3= 6-26 days)

Results cont'd

- Factors positively associated co-prescription: **depression/mood disorder and anxiety disorder,** as well as age, CCI, and viral load
- Factors negatively associated with co-prescription: **female sex and substance use disorder,** as well as calendar year

TABLE 1. Bivariable and multivariable GEE analyses of factors associated with opioid and benzodiazepine co-prescription

Characteristic	Odds Ratio (OR)	
	Unadjusted OR (95% Confidence Interval)	Adjusted OR (95% Confidence Interval)
Sex (female vs male)	0.78 (0.67-0.90)	0.76 (0.64-0.91)
Age at baseline (per 10-year increase)	1.16 (1.11-1.22)	1.11 (1.04-1.18)
Calendar year (per 10-year increase)	0.73 (0.68-0.79)	0.65 (0.59-0.72)
Depression/mood disorder (yes vs no)	1.47 (1.37-1.57)	1.32 (1.22-1.43)
Anxiety (yes vs no)	1.48 (1.33-1.66)	1.45 (1.27-1.66)
Substance use disorder (yes vs no)	0.95 (0.88-1.03)	0.82 (0.74-0.90)
Charlson comorbidity index (per unit increase)	1.08 (1.06-1.10)	1.09 (1.07-1.11)
CD4 cell count (per 100 cells/mm3)	1.00 (0.98-1.03)	1.02 (1.00-1.05)
Viral load (per log10 copies/ml)	1.04 (1.02-1.07)	1.03 (1.00-1.07)

Conclusions

- Co-prescription of opioids and benzodiazepines was seen at some point during study follow-up in **over a quarter of PLWH**
- Canadian and US guidelines provide evidence against co-prescribing opioids and benzodiazepines, but there is a a paucity of evidence on the impact of **short duration co-prescription** for PLWH with **comorbid needs**
- Our findings support the future examination of the **impact of short-term co-prescription** in PLWH, and **interventions to reduce the co-prescribing** of opioids and benzodiazepines

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