Comparison of dolutegravir and elvitegravir based antiretroviral therapy for antiretroviral naïve people living with HIV

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Background

- Integrase Inhibitors are increasingly being used in first line regimens for antiretroviral therapy (ART) naïve people living with HIV (PLHIV) as they are available in single tablet regimens and have been shown to be safe and effective in clinical trials. [1,2]
- Dolutegravir (DTG) was approved in Canada in 2013 as Tivicay and in 2014 as Triumeq (DTG/Abacavir/Lamivudine).
- Elvitegravir (EVG) was approved in Canada in 2012 as Stribild (EVG/Tenofovir disoproxil fumarate/Emtricitabine/Cobicistat) and in 2015 as Genvoya (EVG/Tenofovir Alafenamide/Emtricitabine/Cobicistat).
- There have been no observational studies on the “real world” effectiveness of DTG and EVG.
- This study aims to compare the effectiveness of DTG and EVG in an observational cohort of ART naïve PLHIV in Canada.

Methods

Design: Observational cohort

Participants: ART naïve PLHIV initiating a regimen containing EVG or DTG between January 2000 - December 2016 from the Canadian HIV Observational Cohort (CANOC) who had at least one follow-up viral load test from Quebec, Ontario and British Columbia.

Analysis: Cox proportional hazard models were used to compare time to virologic suppression (defined as VL < 50 copies/mL on two occasions at least 30 days apart) between DTG and EVG based treatment. Models were adjusted for age, gender, race, risk category, province, baseline viral load and year of ART initiation.

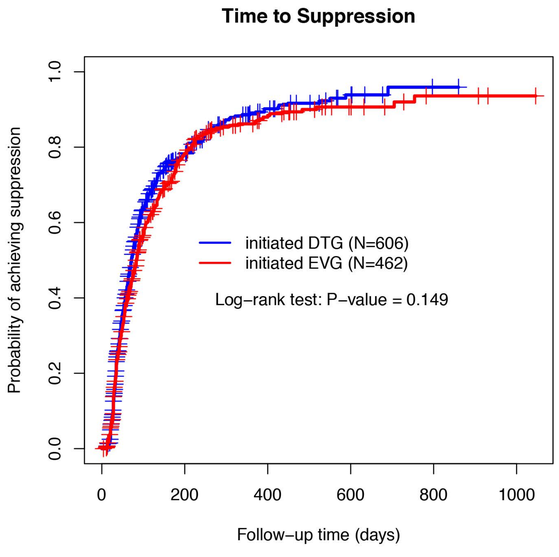
Results

Table 1. Characteristics of study participants at baseline

Characteristics	Initiated DTG	Initiated EVG
n	606	462
Age*	**37.5, 30-49**	**36, 29-46**
Gender		
Male	88.6%	91.3%
Race		
Other	**27.6%**	**32.9%**
Caucasian	**45.5%**	**37.0%**
Risk Category		
MSM	58.9%	59.3%
IDU	5.1%	5.8%
MSM +IDU	2.2%	2.6%
Other	17.2%	14.7%
Year of ART Initiation		
> 2014	**75.2%**	**40.0%**
Province		
BC	50.0%	30.3%
ON	20.5%	41.8%
QB	29.5%	27.9%
Baseline Viral Load (log10 copies/mL)*	4.8,4.2-5.0	4.7,4.2-5.0

*median, Q_1-Q_3. Values in bold have a p-value < 0.05.

Figure 1. Kaplan Meier curve for probability of viral suppression among PLHIV who initiated a regimen containing DTG or EVG



References

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Results

Table 2. Unadjusted and Adjusted Hazard Ratios (HR) for time to viral suppression for PLHIV who initiated a regimen containing EVG or DTG

	Unadjusted HR (with 95% CI)	Adjusted HR (with 95% CI)
Variable of Interest		
Initiating drug		
initiated EVG	1.00 (-)	1.00(-)
initiated DTG	1.11 (0.96-1.27)	1.01 (0.86-1.17)
Confounders		
Age (at ART initiation, per 10 year increment)	1.05 (0.99-1.11)	1.05 (0.99-1.11)
Gender		
Female	1.00 (-)	1.00 (-)
Male	1.22 (0.96-1.55)	1.30 (0.98-1.72)
Race		
Other	1.00(-)	1.00 (-)
Caucasian	1.01 (0.92-1.29)	1.03 (0.86-1.23)
Risk Category		
MSM	1.00(-)	1.00 (-)
IDU	**0.61 (0.44-0.84)**	**0.59 (0.42-0.82)**
MSM+IDU	0.72 (0.44-1.16)	0.73 (0.45-1.18)
Other	0.92 (0.76-1.12)	0.97 (0.76-1.22)
Province		
BC	1.00(-)	1.00 (-)
ON	**0.65 (0.54-0.77)**	**0.57 (0.47-0.69)**
QC	0.96 (0.82-1.13)	**0.74 (0.62-0.89)**
Year of ART initiation		
≤ 2014	1.00(-)	1.00 (-)
> 2014	0.94 (0.82-1.08)	**0.83 (0.71-0.96)**
Baseline Viral Load (log10 copies/mL)	**0.62 (0.56-0.69)**	**0.59 (0.53-0.66)**

Discussion

- There was no evidence of a difference in time to viral suppression among ART naïve PLHIV initiating a DTG or EVG based regimen.
- Regional differences in time to virologic suppression will be examined further.

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