

# Factors Associated With Antiretroviral Treatment Initiation: Preliminary Results From The ENGAGE Cohort Study

EPH49

S. Kesselring<sup>1</sup>, S. Parashar<sup>1</sup>, A. Kaida<sup>1,2</sup>, Z. Cui<sup>1</sup>, N. Oliveira<sup>1</sup>, G. Colley<sup>1</sup>, C. Osborne<sup>1</sup>, H. Samji<sup>1</sup>, M. Kestler<sup>3</sup>, R. Baltzer-Turje<sup>4</sup>, L. McCandless<sup>2</sup>, D. Nash<sup>5</sup>, D. Moore<sup>1</sup>, R.S. Hogg<sup>1,2</sup>  
 1- BC Centre for Excellence in HIV/AIDS; 2- Faculty of Health Sciences, Simon Fraser University; 3- Oak Tree Clinic; 4- Dr. Peter AIDS Foundation; 5- Hunter College

## Background

- Despite clinical guidelines recommending treatment for individuals at any stage in HIV disease, many individuals delay ART initiation.
- We sought to:
  - Identify determinants of late ART initiation;
  - Monitor the characteristics of individuals initiating ART;
  - Determine the impact of HIV-related care on ART uptake and retention in care; and
  - Assess the beliefs and attitudes of new initiators regarding treatment.

## Methods

- People living with HIV and newly initiating ART (within the previous year) were enrolled in ENGAGE, a prospective cohort study nested within the provincial Drug Treatment Program (DTP) at the BC Centre for Excellence in HIV/AIDS.
- Participants completed a 1-hour structured survey collecting demographic information, attitudes toward ART, and use of healthcare and support services.
- The primary outcome, 'late initiation of ART', was defined as CD4 cell count  $\leq 500$  cells/ $\mu$ L at time of initiation.
- Bivariate analyses (Wilcoxon rank-sum and Fisher's exact test) were used to test the association between late initiation and socio-demographic and clinical characteristics.
- Univariate logistic regression was used to determine factors associated with late ART initiation.

## Results

**Table 1: Bivariate Comparison of Participants Initiating ART Late Versus Early**

Variable		Late Initiators $\leq 500$ cells/ $\mu$ L (n=30; 55%)	Early Initiators $> 500$ cells/ $\mu$ L (n=25; 45%)	p-value
Age (median, IQR)		41 (34-46)	35 (28-44)	0.175
Monthly Personal Income (median, IQR)		1100 (600-1800)	1625 (816-4000)	0.061
Birth Sex	Male	23 (77%)	24 (96%)	0.059
	Female	7 (23%)	1 (4%)	
Sexual Orientation	Homosexual	15 (50%)	15 (60%)	0.806
	Heterosexual	10 (33%)	7 (28%)	
	Other	5 (17%)	3 (12%)	
Born in Canada	Yes	22 (73%)	19 (76%)	1.000
	No	8 (27%)	6 (24%)	
Aboriginal Ethnicity	Yes	7 (23%)	8 (32%)	0.551
	No	23 (77%)	17 (68%)	
Completed College	Yes	15 (50%)	11 (44%)	0.788
	No	15 (50%)	14 (56%)	
Incarcerated (ever)	Yes	5 (17%)	8 (32%)	0.216
	No	25 (83%)	17 (68%)	
Homeless	Yes, in last year	4 (13%)	6 (24%)	0.696
	Yes, > a year ago	7 (23%)	5 (20%)	
	No	19 (63%)	14 (56%)	
Hepatitis C Infection (ever)	Yes	6 (20%)	6 (24%)	0.754
	No	24 (80%)	19 (76%)	
Injection drug use (ever)	Yes	7 (23%)	7 (28%)	0.762
	No	23 (77%)	18 (72%)	
Employed	Yes	9 (30%)	11 (44%)	0.399
	No	21 (70%)	14 (56%)	

**Table 2: Univariate analysis: Factors associated with late initiation**

Variable	Odds Ratio	95% Confidence Interval
Monthly Personal Income	1.606 (per \$1,000 decrease in income)	1.023 – 2.522
Birth Sex *	Male	1.000
	Female	7.299 0.833-62.500

\*Marginally significant

- From December, 2013, to January, 2015, 55 participants have been enrolled in ENGAGE, representing 15% of the 377 individuals who are eligible to participate.
- Enrollees were 15% female, had a median age of 40 years [IQR: 29-45], 27% reported Aboriginal ancestry, and had a median annual personal income of 13,332 CAD [IQR: 7,800-27,600].
- In addition, 24% reported ever being incarcerated and 25% had a history of injection drug use.
- Overall, 55% of our participants were late ART initiators. The median CD4 cell count at time of ART initiation was 500 cells/ $\mu$ L [IQR: 310-640].
- In contrast, for all eligible individuals the median CD4 cell count at initiation was 401 cells/ $\mu$ L [IQR:218-590].
- Higher personal income was the only variable found to be negatively associated with late initiation (Adjusted Odds ratio [AOR] = 0.62, 95% Confidence Interval [CI] 0.40-0.98) per thousand-dollar increase).
- Female gender was marginally associated with late initiation (AOR: 7.30, 95% CI 0.83-62.50) with a greater proportion of women (88%) initiating late than men (49%).

**Table 3: Comparison of Study Participants to the Eligible Population**

Variable	ENGAGE Participants (n=55)	Eligible individuals (n=377)
CD4 Cell Count at Time of ART Initiation (median, IQR)	500 cells/ $\mu$ L (310-640 cells/ $\mu$ L)	401 cells/ $\mu$ L (218-590 cells/ $\mu$ L)
Age (median, IQR)	40 (29-45)	40 (31-51)
Gender	Male	315 (84%)
	Female	47 (85%) 8 (15%)

## Discussion

- In this analysis, over half of the individuals initiating ART in BC initiated late, with disparities observed by income level.
- Continued efforts are needed to engage individuals in care earlier in order to fully benefit from high-quality HIV care.
- Due to our current small sample size we have low power to detect differences between early and late initiators.
- Recruitment for the ENGAGE Study is ongoing.

Conflict of Interest Disclosure: I have no conflicts of interest