Delayed linkage to HIV care among refugee late presenters in Montreal, Canada

B. LINTHWAITE[1], M. KLEIN[1], B. LEBOUCHÉ[1], J. COX[1,2], C. FRENETTE[1], C. COSTINIUK[1], and N. KRONFLI[1]

[1]McGill University Health Centre, Montreal, Canada

[2]Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, Canada

Introduction

Refugees living with HIV in Canada

- There is an increasing number of refugees living with HIV (RLHIV) in Canada.[1]
- In the first half of 2018, Quebec received >50% of all refugees entering Canada, primarily from the United States.[2,3]
- All refugees undergo an Immigration Medical Examination (IME), which includes mandatory HIV screening with linkage to HIV care facilitated by immigration physicians.[4]
- Health-related costs for all refugees fall under the Interim Federal Health Program (IFHP).[4]

Delayed cART initiation among RLHIV

- The consequences of delayed combination antiretroviral (ARV) therapy (cART) include:
  - Higher rates of secondary transmission;[5] and
  - Increased HIV-related morbidity and mortality.[6]
- These consequences are more pronounced in late presenters (CD4 count < 350 cells/µl).[7,8]
- Recent European studies suggest that RLHIV are significantly more likely to be late presenters.[9, 10]

Objectives

We conducted a retrospective chart review of RLHIV referred to the McGill University Health Centre (MUHC) for HIV care to:

1) Quantify time to each step in the HIV care cascade from entry into Canada to viral suppression among those newly diagnosed in Canada; and
2) Describe baseline sociodemographic and clinical characteristics

Methods

Study design

This is a retrospective, single arm cohort study of adult RLHIV (aged ≥18 years) referred to the MUHC for HIV care over a one-year period starting June 1st 2017.

HIV care cascade for RLHIV

We conceptualize the HIV care cascade for RLHIV in Canada as a continuum of HIV care from entry into Canada to viral suppression.[11] Among refugees diagnosed with HIV in Canada, we will measure the time (in days) between six steps along the care cascade:

i. Entry into Canada;
ii. IME screening;
iii. Notification of HIV diagnosis*;
iv. Linkage to HIV care**;
v. First cART prescription in Canada; and
vi. First undetectable viral load (VL) in Canada.

**Notification of HIV diagnosis:* date of referral for HIV care.
***Linkage to HIV care:* date of the first HIV care visit.

Results

Baseline sociodemographic and HIV-related characteristics are summarized in Table 1.

- Overall, 49% (50/102) of refugees were newly diagnosed in Canada.

Among those newly diagnosed:

- **62% (31/50) were late presenters** (CD4 < 350 cells) and **22% (11/50) presented with advanced HIV** (CD4 < 200 cells or an OI);
- **24% (12/50) presented with high-level viremia** (VL>100,000 copies/ml); and
- 38% had baseline ARV resistance to at least one drug class.

Among those previously diagnosed outside Canada:

- 31% (16/52) were late presenters and 15% (8/52) had advanced HIV; and
- 31% (16/52) had detectable VLs at presentation.

Median times between each step of the HIV care cascade among RLHIV diagnosed in Canada (Fig. 1):

- *Entry into Canada to IME screening:* 30 days [IQR: 14;55];
- *IME screening to notification of diagnosis:* 31 days [IQR: 21;49];
- *Notification to linkage to care:* 6 days [IQR: 1.5;18];
- *Linkage to cART prescription:* 11 days [IQR: 5.5;17]; and
- *cART prescription to first undetectable VL:* 46 days [IQR: 29;76].

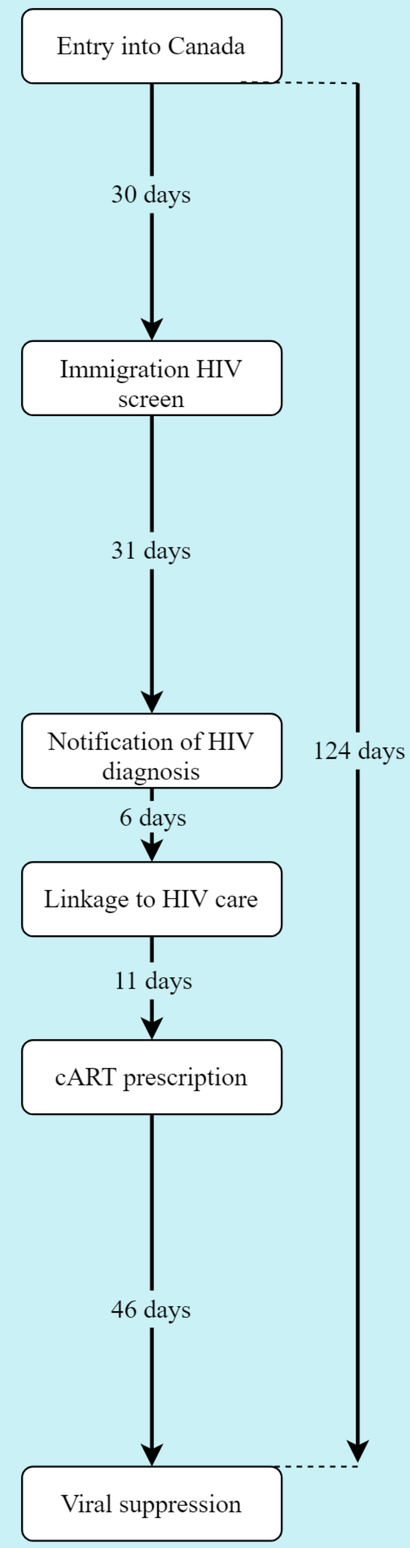
- Median time from entry into Canada to viral suppression was 152 days [IQR: 126;183].
- Overall, **38% of newly diagnosed patients were linked to HIV care within 30 days**, 74% within 60 days and 86% within 90 days from HIV screening.

Table 1: Characteristics of the study sample

			Overall (n=102)	Diagnosed in Canada (n=50)	Diagnosed outside Canada (n=52)
Age (median [IQR])			37 [32; 44]	37 [32; 44]	37 [33; 43]
Sex		Female	68 (67%)	27 (54%)	41 (78%)
		Male	34 (33%)	23 (46%)	11 (21%)
Country of origin	Africa	Nigeria	23 (23%)	9 (18%)	14 (27%)
		Other	32 (31%)	13 (26%)	19 (37%)
	Latin America	Haiti	45 (44%)	28 (56%)	17 (33%)
		Other	2 (2%)	0 (0%)	2 (4%)
CD4 at presentation in Canada, cells/µl (median, range, [IQR])			361, 11-1136, [229; 407]	309, 11-811, [210; 386]	446, 14-1136, [271; 674]
	CD4 nadir < 200		19 (19%)	11 (22%)	8 (15%)
	CD4 nadir < 350		47 (46%)	31 (62%)	16 (31%)
Baseline viral load, copies/ml (median, range, [IQR])			3857, <20 - >1 million, [<20; 41368]	29191, <20 - > 1 million, [5558; 97534]	<20, <20 - > 1 million, [<20; 533]
OI at presentation			1 (1%)	1 (2%)	0 (0%)
Requiring primary prophylaxis			18 (18%)	9 (18%)	9 (17%)
cART regimens, most recent prescription	Single treatment regimens		84 (82%)	41 (82%)	43 (87%)
	3rd agent:	NNRTI	3 (3%)	0	3 (6%)
		PI	3 (3%)	0	3 (6%)
		II	95 (93%)	49 (98%)	46 (88%)
Baseline ARV resistance		Yes	27 (26%)	19 (38%)	8 (15%)
		No	34 (33%)	26 (52%)	8 (15%)
		Unknown	41 (40%)	5 (10%)	36 (69%)
PPD		Positive	40 (39%)	16 (32%)	24 (46%)
		Negative	57 (56%)	33 (66%)	24 (46%)
		Not done/missing	5 (5%)	1 (2%)	4 (8%)
Co-infection with HBV			6 (6%)	4 (8%)	2 (4%)

OI = opportunistic infection; ARV = antiretroviral; NNRTI = non-nucleoside reverse transcriptase inhibitor; II = integrase inhibitor; IQR = interquartile range; cART = combination ARV therapy; PI = protease inhibitor; PPD = purified protein derivative.

Figure 1: Median time between HIV care cascade steps



Conclusions

- While the majority (62%) of newly diagnosed refugees were late presenters, only 38% were linked to care within 30 days.
- The most significant delays occurred between entry into Canada and IME screening (median of 30 days), and IME screening and notification of HIV diagnosis (median of 32 days).
- Even in a system with a clear care pathway, there is a need to expedite referrals to HIV care following entry into Canada.
- Further investigations into potential inefficiencies in the IME process should be explored.

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