Prevalence and correlates of food insecurity in a Canadian cohort of HIV-infected individuals receiving highly active antiretroviral therapy

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Background

Food insecurity is defined as having “uncertain or limited availability of nutritionally adequate or safe food or the inability to procure food in socially acceptable ways” (1). An increasing number of studies suggest that high number of people living with HIV/AIDS are food insecure in North America (2-4). Studies conducted in San Francisco in the United States, and in British Columbia in Canada, suggest that food insecure individuals receiving highly active antiretroviral therapy (HAART) have reduced body mass index (BMI), lowered CD4 cell counts, decreased rates of virological suppression and higher case fatality (2, 3, 5).

Objectives

We sought to evaluated the prevalence and independent risk factors associated with food insecurity among HIV-infected individuals receiving HAART in BC and Canada.

Methods

This study was conducted in the Longitudinal Investigations Into Supportive and Ancillary health services (LISA) cohort study. Participants were eligible if they were ART-naïve prior to initiating HAART, and 19 years of age. Our primary outcome variable, food insecurity, was measured using the Radimer/Comell scale. Independent predictors of food insecurity were examined in relation to socio-demographic, behavioral and clinical explanatory variables. Bivariate analyses were conducted using Fisher’s Exact or Chi-square tests for categorical variables and the Kruskal-Wallis or ANOVA tests for continuous variables. Univariate and multivariate logistic regression were performed to determine independent predictors of food insecurity, assuming a p-value of <0.05 for statistical significance.

Results

Between July 1, 2007 and June 30, 2008, 457 individuals had enrolled in the LISA study. The median age of participants is 46 (interquartile range [IQR] 41, 52), 342 (74.8%) are male, 36 (7.8%) have a body mass index below 18.5, 150 (32.8%) identify as Aboriginal, 158 (34.6%) identify as gay, bisexual, or lesbian, 194 (42.5%) have not graduated from high school, 294 (64.8%) have an income of less than $15,000 per year, 216 (47.3%) are illicit drug users, 261 (57.1%) have depressive symptoms, 368 (84%) are adherent to HAART, 34 (7.4%) have financial dependents, 247 (55.1%) have a history of alcohol dependence, 308 (67.7%) smoke tobacco, 148 (33.9%) reside in the Downtown Eastside. The median HIV plasma viral load and CD4 cell count among participants is 340 mL (IQR 210, 510) and < 250 cells/mm3 (IQR < 250, < 250). Among the 457 individuals enrolled in the LISA cohort, 324 (70.8%) are food insecure. In multivariate analysis (Table 1), factors significantly associated with food security include an annual income less than $15,000 (Canadian dollars) (odds ratio [OR] 3.11, 95% confidence interval [CI] 1.91, 5.06), illicit drugs use (OR 2.06, 95% CI 1.18, 3.60), tobacco smoking (OR 2.58, 95% CI 1.53, 4.34), depressive symptoms (OR 2.43, 95% CI 1.50, 3.95), and lower CD4 cell count (OR 1.13, 95% CI, 1.02, 1.25).

Table 1. Univariate and multi-variate analysis associated with food insecurity among individuals receiving HAART in BC

Discussion

We found that 71% of individuals on HAART in BC are food insecure. The prevalence of food insecurity in our cohort is approximately 7 times higher than the Canadian general population, 43% higher than a separate cohort of HIV-infected individuals on HAART in BC 10 years earlier (2), and 20% higher than homeless and marginally housed HAART patients in San Francisco (3). These findings suggest an urgent need to identify the primary drivers of food insecurity in this population, and to develop appropriate program and policies.

References