Burden of age-associated chronic comorbidities among people living with and without HIV: Years of life lost to premature mortality in British Columbia, Canada

NGA Nanditha,[1,2] M Mushfiquee,[1] J Zhu,[1] J Kopec,[2,3] RS Hogg,[1] JSG Montaner,[1,2] VD Lima,[1,2]

[1] British Columbia Centre for Excellence in HIV/AIDS, [2] University of British Columbia, Faculty of Medicine, [3]Arthritis Research Canada

Introduction

As people living with HIV (PLWH) live longer, morbidity and mortality from **chronic age-associated comorbidities** have emerged as major concerns. To describe the burden of age-associated chronic comorbidities among PLWH compared to HIV-negative controls, we estimated **Years of Life Lost due to premature mortality** (YLL) related to these comorbidities.

Methods

Design: population-based retrospective cohort

Data: longitudinal individual-level from the Comparative Outcomes And Service Utilization Trends (COAST) cohort

Study population: antiretroviral (ART)-treated PLWH and 1:4 age-sex-matched HIV-negative individuals in British Columbia, Canada, who were ≥19 years old, ART naïve, and followed for ≥1 year during 2000-2012

Outcomes: YLL associated with chronic age-associated comorbidities for the year 2012

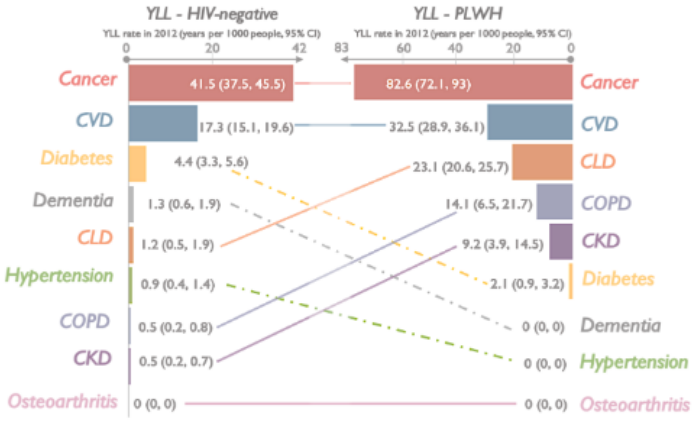
- **YLL**: the number of deaths multiplied by the residual life expectancy at age of death
- **Cause-specific deaths**: identified from BC Vital Statistics dataset using ICD– 10 codes.
- **Comorbidities**: diabetes, osteoarthritis, hypertension, dementia, non-AIDS cancers, cardiovascular (CVD), chronic kidney (CKD), chronic liver (CLD) & chronic obstructive pulmonary diseases (COPD)

Statistical analysis: non-parametric bootstrapping (10^4 bootstrap samples with replacement; sample lengths = the size of each stratum) estimated the credible intervals (CI) of YLL per 1000 people

Discussion

PLWH experience **disproportionate burden** of chronic comorbidities and related premature mortality. The disparities are likely **multifactorial**, and may relate to socio-economic & lifestyle differences, residual HIV-related inflammation, and ART-related toxicities. Our findings highlight the need to enhance **prevention & management** of comorbidities as part of HIV care models.

Figure 1. Years of Life Lost due to premature mortality (YLL) associated with chronic age-associated comorbidities among PLWH and HIV-negative individuals in British Columbia for the year 2012



Results

- At baseline, our matched cohort consisted of 82% males with a median age of 40 years (Q1-Q3: 34 to 47)
- At the start of 2012, **6449 PLWH and 29,273 HIV-negative** individuals were alive median age of 49 years (43-56) vs. 50 (44-56)
- The examined comorbidities (**Figure 1**) led to a total of 1047.0 & 1970.9 years lost among PLWH & HIV-negative individuals, respectively, with PLWH experienced **2.5x the burden** (162.4 vs. 67.3 years/1000 people)
- Similar to Canada's and the global trends, **cancers and CVD** contributed the highest YLL in both study populations; cancers made up 51% (PLWH) and 62% (HIV-negative) of YLL
- **Diabetes and dementia** contributed the third and fourth highest YLL among HIV-negative individuals as did **CLD and COPD** among PLWH

Lead Author Contact: Ditha | dnanditha@bccfe.ca | +1-778-926-0988

PRESENTED AT INTERNATIONAL HIV & AGING WORKSHOP | 23-24 SEPTEMBER 2021

Funding: This study is funded by CIHR Grant PJT-148595 and CANFAR Innovation Grant – 30-101. COAST is funded by the Canadian Institutes of Health Research (CIHR), through an Operating Grant (#120419) and a Foundation Award to RSH (#142342). Disclaimer: All inferences, opinions, and conclusions drawn in this poster are those of the authors, and do not reflect the opinions of policies of the Data Stewards or funders.