

# Hepatitis C co-infection is associated with an increased risk of incident chronic kidney disease in HIV-infected patients initiating combination antiretroviral therapy

Authors: Carmine Rossi, Janet Raboud, Sharon Walmsley, Curtis Cooper, Tony Antoniou, Ann N. Burchell, Mark Hull, Jason Chia, Robert S. Hogg, Erica E.M. Moodie, Marina B. Klein, and the Canadian Observational Cohort (CANOC) Collaboration

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## Objective

The purpose of this study was to determine if co-infection with Hepatitis C is associated with an increased risk of developing chronic kidney disease (CKD) among a cohort of Canadians living with HIV.

## Importance of this Study

- Modern HIV treatment is associated with longer life expectancies, leading to an increase in illness and deaths from non-AIDS and ageing-related conditions among patients with HIV.
- CKD can lead to cardiovascular health complications and early death among individuals living with HIV, but the complex risk factors that influence the development of CKD are poorly understood.
- Hepatitis C co-infection has both direct and indirect impacts on development of CKD, and the study examines this association among individuals who received HIV treatment.

## How this Study was Conducted

- Data was analyzed from the CANOC collaboration, an interprovincial collaborative cohort of HIV-positive individuals on antiretroviral therapy in Canada.
- 2596 of 8980 CANOC patients who initiated HIV treatment during the study period (2000-2012) were eligible for inclusion in this study.
- Patient eligibility was determined based on availability of initial and follow-up measurements of kidney function, with initial kidney function at the time of starting HIV treatment showing that the patient did not have a pre-existing condition.
- 19% of eligible participants were co-infected with Hepatitis C.
- Kidney disease outcomes were compared between patients with and without Hepatitis C co-infection.

## Study Results

- 150 patients developed CKD during the study period, with Hepatitis C co-infected patients more likely to develop CKD
- Additional factors associated with CKD were female sex, aging (after 40 years), poorer results on initial measurements of kidney function (estimated glomerular filtration), increasing HIV viral load, and total level of exposure to two specific HIV medications: tenofovir and lopinavir.

## Implications

- Hepatitis C co-infected patients should be monitored for kidney disease in order to identify patients that require modifications to their HIV treatment regimen or who may benefit from additional treatments that prevent further decline in kidney function.

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