



Members of the Viral Hepatitis Research Program and partners at the Hope to Health Centre for World Hepatitis Day

## Reducing barriers to care for those living with HCV in the Downtown East Side of Vancouver

July 28th was World Hepatitis Day, an annual, purposeful opportunity to raise awareness of the global burden of viral hepatitis and to spark action. This year's theme is 'I Can't Wait', which highlights the urgency from the global community to improve access to life-saving treatments. Around the world, every 30 seconds someone dies from a hepatitis related illness, despite the fact that the hepatitis C virus (HCV) is now generally considered a curable disease. Relatively new and well-tolerated direct-acting antivirals (DAAs) have a cure rate of 95 percent, however, there are still significant barriers to get treatment to those in need.

Using its proven **Treatment as Prevention**® strategy, the BC-CfE is raising awareness of HCV and its treatment in several ways. Most recently, the BC-CfE launched Hep C Connect, a pilot project funded by Gilead Sciences. Started in November 2021, it provides nurse-led, low barrier HCV testing, education, and linkage to care to clients of the Hope to Health (H2H) supervised consumption site located at 611 Powell Street.

Beyond testing, the overarching aim of Hep C Connect is to enhance linkage to care and retention amongst unattached and underserved clients diagnosed with HCV in the Downtown East Side (DTES). Clients are offered rapid antibody testing and, if positive, same day, in-house, confirmatory HCV RNA testing. Pre- and post-test counselling, as well as follow-up and linkage to care is provided by an LPN. Hep C Connect provides a unique integration of HCV related services including low-barrier HCV education, community-based harm reduction services, and in house, same day testing, reducing barriers which often discourage people,

especially in the DTES, from accessing lifesaving HCV treatment.

As of this month, Hep C Connect has served a total of 148 clients; 51 of which had no existing attachment to primary care; 51 tested for HCV RNA with 24 clients who tested positive for HCV RNA, 5 of which have begun treatment. The program recently expanded to serve a higher volume of clients and extend the length of follow up from 6 to 12 months.

Clinical Research Coordinator, Shaughna Cooper, with the BC-CfE's Viral Hepatitis Research Program (VHRP) said, "While clients may be coming to the H2H supervised consumption site primarily to access harm reduction supplies or consume drugs in a safe environment, Hep C Connect provides them with the ability to connect with staff about HCV and to learn more about their status. Given the complexity of challenges clients are facing, HCV tends to get deprioritized in the face of more immediate concerns which is why it is crucial to have low barrier access to testing and treatment available."

Cooper also said, "Our hope is that Hep C Connect and the evaluation research that is produced from it helps to demonstrate the need for a standard integration of harm reduction services and pathway to HCV care as there's a dearth of similar programs at the moment."


Per-SVR, short for PrEseRvation of Sustained Virologic Response, is another VHRP study and was launched in 2016 to evaluate the roll-out of DAAs in BC, following a request by provincial Ministry of Health. The Per-SVR study follows individuals who have recently cleared

HCV following completion of DAA treatment and monitors their health outcomes, health care engagement, and reinfection events over time. This study will generate impactful data which will be important to tailor the provincial response to the HCV epidemic and, importantly, measure the impact on clients as well.

Phindile Tshabalala, a Clinical Research Coordinator with the VHRP said 'The scope of the Per-SVR study extends beyond understanding the prevalence of HCV reinfections within marginalised and disenfranchised communities. This is a four-year, longitudinal study that identifies the societal factors influencing access to care and examines the acute influence of policy on the access, availability, and point-of-care treatment for underserved populations. Community-centred healthcare is the foundation on which the Per-SVR study operates.

Our relationship with participants goes far beyond the correlational, observational, and simple collection of data. We do this by building meaningful and long-standing relationships with our participants—the only way to ensure the continued improvement of health and wellbeing in our community. We try our best to provide consistent, accessible client care as it is essential to, and the only modality effective in, combatting HCV.'

To mark the day the VHRP team strengthened bonds with the community and raised awareness about HCV testing, treatment and its studies as well as the services offered at H2H providing lunch, refreshments and educational materials and naloxone training.



» "We need to be innovative in our health service delivery, including offering education, care, and treatment in spaces designed for under-served populations, such as people who use drugs. People who use drugs often face stigma and barriers to treatment, so bringing hepatitis C care and treatment in ways that are patient-centered is needed."

— BC-CfE Research Scientist, Dr. Kate Salters

## Antiretroviral drug interactions decline, but clinical screening for drug interactions remains important



Pharmacovigilance Initiative Principal Investigator Dr. Rolando Barrios and Research Coordinator Ms. Kathy Lepik

» New BC-CfE research, published in the recent issue of *AIDS*, characterizes trends in the annual prevalence of drug interactions between antiretroviral therapy (ART) and other non-antiretroviral medications in relation to ART prescribing patterns. The study also describes drug interaction-related ART changes.

Titled, *"Evolving patterns of antiretroviral drug interactions in people with HIV in British Columbia, Canada,"* this cohort study included persons living with HIV (PLWH) who received ART through the BC-CfE Drug Treatment Program (DTP) between 2010 and 2016. The research analyzed medication dispensing records from the BC-CfE's **Seek And Treat For Optimal Prevention Of HIV/AIDS®** (STOP HIV/AIDS) population-based, linked administrative-health dataset, designed to support BC's **Treatment as Prevention®** activities. Clinician-reported drug interaction-related ART changes were also summarized using records from the BC-CfE Pharmacovigilance Initiative, which monitors ART safety in DTP participants.

The study included 8,571 PLWH who received both ART and non-antiretroviral medications. Researchers found that the proportion of ART-treated PLWH having at least one drug interaction significantly declined from 85% in 2010 to 71% in 2016. The proportion with a non-recommended ("avoid") drug combination also fell from 5.6% to 3.2% during this time period. The authors observed that the downward trend in drug interaction prevalence paralleled the declining use of ART regimens with higher drug interaction potential (e.g. ritonavir or cobicistat-boosted protease inhibitors, and hepatic enzyme inducers such as efavirenz or nevirapine) and increasing use of ART with lower drug interaction

potential (e.g. unboosted integrase inhibitors such as dolutegravir). The researchers found the overall adjusted risk of receiving a non-recommended combination of ART and non-antiretroviral drugs was three times higher for persons taking antiretrovirals with higher drug interaction potential versus those receiving lower drug interaction-risk ART.

Reports of drug interaction-related ART changes received by the Pharmacovigilance Initiative also mainly involved interactions with ritonavir or cobicistat-boosted protease inhibitors. In particular, drug interactions between the "boosted" ART and inhaled corticosteroids such as fluticasone (used to treat asthma and allergies) were observed throughout the study period and were associated with adverse events including adrenal suppression.

The authors concluded that although the occurrence of ART-related drug interactions is declining as ART prescribing shifts towards antiretrovirals with lower drug interaction potential, potentially harmful, non-recommended drug combinations remain a concern. They caution healthcare providers to screen for drug interactions each time new ART or non-antiretroviral medications are prescribed or dispensed.

Pharmacist Kathy Lepik, the Research Coordinator of the BC-CfE Pharmacovigilance Initiative, and project lead for this study said, "Newer antiretrovirals have relatively lower risk for drug interactions compared to older HIV medications, but remember: Always check for possible antiretroviral drug interactions before taking any medicine or supplement."

## RESEARCH

### Study looks at airway aging in people living with HIV and COPD

» Collaborating with colleagues from UBC and UCLA, BC-CfE researchers, in a novel study, looked at whether people living with HIV (PLWH) and (COPD) experience an acceleration of aging in their airways, independent of their smoking history.

The study, titled *"Airway Aging and Methylation Disruptions in HIV-associated Chronic Obstructive Pulmonary Disease"* was recently published in the *American Journal of Respiratory and Critical Care Medicine*.

The objective of this study was to identify whether accelerated aging can be observed in the airways of PLWH with COPD. In order to identify accelerated aging, the researchers sought a unique DNA methylation signature, one which would suggest a unique aging pathophysiology in the HIV airway epithelium.

The researchers sampled airway epithelial cells from patients living with both HIV and COPD. Epithelium is a type of body tissue which forms the covering on all internal and external surfaces of our bodies. In the samples, researchers found major alterations in the methylation pattern of airway epithelial cells consistent

with accelerated aging, which differed from the pattern observed in HIV-negative individuals with COPD.

An important control group in this study included PLWH who were never-smokers. In comparison with HIV-negative never-smokers, PLWH displayed accelerated aging even in the absence of cigarette smoking. Another factor which makes these findings even more striking is that the control participants were chronologically older than the PLWH groups.

Dr. Janice Leung, Assistant Professor at UBC's Faculty of Medicine and a respirologist at St. Paul's Hospital said, "Even with antiretroviral therapy, people living with HIV appear to age faster than HIV-uninfected people. This work shows that the lung is not spared in this accelerated aging process and could lead many people living with HIV to have chronic shortness of breath and cough."

This study represents the first detection of an accelerated methylation aging signal in the HIV airway epithelium. The authors say this signal is accentuated by the dual presence of HIV and COPD, and conclude their study by calling for a tailored approach to COPD treatment in PLWH based on further study of these patterns.

Dr. Martin Schechter appointed to the Order of Canada



Prominent researcher and co-founder of the BC-CfE, Dr. Martin Schechter, was recently appointed as a Member of the Order of Canada.

In 1990, Dr. Schechter co-founded the CIHR Canadian HIV Trials Network (CTN) with Drs. John Ruedy and Julio Montaner. As National Director of the CTN, from 1992 to 2014, Dr. Schechter led the expansion of the Network into becoming a Canada-wide collaborative of researchers, people living with HIV/AIDS, and laboratories which continues to study treatments, preventative methods, and vaccines for HIV/AIDS.

Dr. Schechter was the BC-CfE's first Director of Epidemiology and Public Health from 1992 to 2006. In 1996, he co-chaired the XI International AIDS Conference in Vancouver, a pivotal event in the history of HIV/AIDS research and the BC-CfE's history, as it was at this global conference that the benefits of triple-therapy highly active antiretrovirals were first shared with the public.

Today, Dr. Schechter continues his work in HIV/AIDS research as a professor at UBC's School of Population and Public Health.

The appointments to the Order of Canada were announced by Her Excellency the Right Honourable Mary Simon, Governor General of Canada. Inclusion in the Order is considered one of the Canada's highest civilian honours, as the Order of Canada recognizes those who have enriched the lives of others and who have made extraordinary contributions to our nation.

Congratulations to Dr. Schechter on this tremendous honour!

### BC Centre for Excellence in HIV/AIDS

- > Improve the health of British Columbians with HIV through comprehensive research and treatment programs;
- > Develop cost-effective research and therapeutic protocols;
- > Provide educational support programs to health-care professionals;
- > Monitor the impact of HIV/AIDS on BC and conduct analyses of the effectiveness of HIV-related programs.

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Funding for the BC Centre for Excellence in HIV/AIDS is provided by the BC Ministry of Health.

