



## EFFECT OF GENDER AND CALENDAR YEAR ON TIME TO AND DURATION OF VIROLOGIC SUPPRESSION AMONG ANTIRETROVIRAL-NAÏVE HIV-INFECTED INDIVIDUALS INITIATING COMBINATION ANTIRETROVIRAL THERAPY

- Raboud J, Blitz S, Walmsley S, Thompson C, Rourke S, Loutfy M, and the Ontario HIV Treatment Network Cohort Study Team
- HIV Clinical Trials 2010; 11(6):340-350

### *What research question is addressed by ‘Effect of Gender and Calendar Year on Time to and Duration of Virologic Suppression Among Antiretroviral-Naïve HIV-Infected Individuals Initiating Combination Antiretroviral Therapy?’*

The purpose of the study was to determine what impact gender (male or female) and calendar year (i.e., in what year antiretroviral therapy was initiated) had on time to virologic suppression (i.e., the time between initiating combination antiretroviral therapy [cART] and when virus can no longer be detected in the blood) and on durability (i.e., the length of time between viral suppression and viral rebound, where virus can once again be detected in the blood).

### *What was the study conclusion?*

The study found that time to virologic suppression was shorter for women than for men, whereas durability of viral suppression was slightly longer for men than for women. However, if women taking cART solely for the purpose of preventing mother-to-child transmission of HIV were omitted from the analyses, there were no differences between men and women in the time to virologic rebound. Time to virologic suppression for both men and women has decreased over time while the duration of suppression has remained stable, irrespective of the calendar year of cART initiation.

### *Why is this question important?*

The proportion of women living with HIV in Canada and other high-income countries has increased significantly since the epidemic began, with women now representing approximately 20% of all people living with HIV (PHA) in Canada. Viral load suppression is important because it predicts the durability of response to cART and decreases the risk of developing drug resistance. Previous studies on whether there are gender-based differences in virologic suppression have not been conclusive. Because calendar year of cART initiation can be a confounding variable (individuals beginning cART more recently with more effective and tolerable antiretrovirals (ARVs), and most women living with HIV have been infected more recently, investigators also used calendar year to assess the speed and durability of viral suppression.

### *How was the study conducted?*

Researchers reviewed clinical data of 840 OCS participants who initiated cART after January 1, 1999, were ARV-naïve, had an unsuppressed viral load within 12 months before starting cART and had at least two viral load measurements after initiating cART (690 men and 150 women). Calendar year of cART initiation was divided into four periods: 1999–2001; 2002–2004; 2005–2006; and 2007–2008).



### **What were the main results of the study?**

Study investigators found that the time to virologic load suppression was longer for men compared to women (4.8 months compared to 4 months) but that men tended to have more durable viral suppression compared to women (9% of men experienced viral rebound within 12 months of cART initiation compared to 21% of women). The time to virologic suppression after cART initiation improved steadily over the past decade, but investigators did not find any improvements in durability of viral suppression among the four time periods. Investigators also analyzed the clinical data to assess the potential impact of pregnancy on the association between gender and virologic rebound; after removing women who were thought to be taking cART to prevent mother to child transmission from their analysis, investigators did not find a significant association between gender and virologic rebound. This finding suggests that the gender differences in virologic rebound could be a result of women stopping cART upon the birth of their child if they did not need treatment for their own health. These virologic rebounds are less of a concern because they occurred as a result of women choosing to cease treatment not yet required for their own health, not as a result of treatment failure.

### **What do the study results mean for the treatment and care of people living with HIV?**

The study results were consistent with previous studies indicating improved time to viral suppression over the past decade as a result of improved, more tolerable drugs with simplified dosing requirements (e.g., once daily dosing) becoming available. However, this did not translate into improved durability, which is somewhat surprising as the same factors (tolerability, less frequent dosing and the availability of fixed-dose combinations) could be expected to improve both time to suppression and durability of suppression. The study also found that people who inject drugs had shorter times to viral rebound compared to other participants, suggesting that clinicians should increase counselling and education on adherence and harm reduction interventions for this population.

### **Where can I find the full-length publication of this study?**

This study was published in HIV Clinical Trials in 2010. The full text version is available at:

<http://thomasland.metapress.com/content/338nl6757x768170/?p=a+9908107f326477d901a2d18e7530392&pi=4>.

The **Ontario HIV Treatment Network Cohort Study (OCS)** is an ongoing research study that collects clinical, social and behavioural information about people living with HIV (PHA) in Ontario. Participation in the study is voluntary, and all personally identifying information of study participants is removed to ensure confidentiality. The OCS was established to improve our understanding of HIV and to inform HIV prevention, care and treatment strategies for people living with HIV and groups at increased risk of HIV infection. For more information about the OCS, please contact the OCS Project Coordinator, Samantha Robinson at: [srobinson@ohtn.on.ca](mailto:srobinson@ohtn.on.ca).