Factors Associated With Virological Suppression among HIV-Positive Individuals on Highly Active Antiretroviral Therapy in a Multi-Site Canadian Cohort

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Objective

This study assessed the factors associated with virological suppression among individuals receiving HIV treatment in Canada.

Main Finding

The following factors predicted increased likelihood of virological suppression: Older age, male sex, receiving treatment in Ontario, non-injection drug use (IDU) history, having an AIDS diagnosis at baseline.

Importance of this Study

- One of the primary goals of highly active antiretroviral therapy is the obtainment and maintenance of complete HIV virological suppression.
- Suppression is important for patient health and reduces the risk of HIV transmission.
- Earlier suppression reduces the length of time one carries detectable viral loads and minimizes the development of drug resistance.
- Identifying factors that predict time to virological suppression on modern HIV treatment programs is vital to optimizing therapeutic success.

How this Study was Conducted

- Data were analyzed from the CANOC collaboration, an interprovincial collaborative cohort of HIV-positive individuals on antiretroviral therapy in Canada.
- CANOC compiled HIV clinical and demographic data from 8 cohorts across British Columbia, Ontario, and Quebec.
- 3,555 individuals from the CANOC collaboration were included in this analysis.

Study Results

- Participants who were older, male, had an AIDS diagnosis at baseline, received treatment in Ontario versus British Columbia, and did not have a history of injection drug use were significantly more likely to achieve virological suppression.
- The median time to suppression was 4.55 months; however, timing of initial suppression was not a reliable predictor of long-term suppression.
- Patients on initial antiretroviral regimens containing efavirenz, lopinavir, and atazanavir were more likely to achieve suppression than those whose first regimen contained nevirapine.

Implications

- Careful selection of antiretrovirals composing a treatment program is critical to patient tolerance and adherence, which ultimately increases the probability of achieving virological suppression.
- These findings can help identify those at risk for suboptimal therapeutic outcomes.
- Exploration of the potential benefits of earlier suppression in additional cohorts with extended follow-up periods would be beneficial.