Comparison of atazanavir/ritonavir and darunavir/ritonavir based antiretroviral therapy in antiretroviral naïve patients


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**Objective**
The purpose of this study was to compare the effectiveness of two common treatment options for patients with HIV.

**Importance of this Study**
- Atazanavir/ritonavir and darunavir/ritonavir are considered especially important drug treatment options for patients for whom poor adherence to treatment is expected.
- Although randomized trials have been used to evaluate the effectiveness of these treatment options there is a gap in research that compares these drug combinations in clinical practice.
- Randomized trials have limitations because study participants may not be representative of patient characteristics.
- This observational study addresses this limitation by comparing the effectiveness of two common treatment options in patients who are being treated in clinical practice.

**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.
- Study participants were individuals beginning HIV treatment for the first time on either an atazanavir/ritonavir- or darunavir/ritonavir-based regimen.
- Participant eligibility depended on viral load (a measure of the blood level of the HIV virus) – those with >200 copies/mL before or at the beginning of treatment who had at least one follow-up viral load test were included.
- The clinical outcome of interest was regimen failure, including virologic failure and discontinuation for any reason.
- Virologic failure was defined as a viral load >1000 copies/mL between 16 and 24 weeks or a viral load >200 copies after 24 weeks of treatment.
- Discontinuation was defined as stopping treatment for more than 60 days.

**Study Results**
- Patients on Darunavir/ritonavir had a lower risk of virologic failure, but this finding was influenced by provincial differences in patient characteristics and prescribing patterns.
- Atazanavir/ritonavir was the recommended regimen in BC for patients at higher risk of treatment failure, reflecting a selection bias since patients in Quebec and Ontario showed no differences in risk of regimen failure.

**Implications**
- Atazanavir/ritonavir and darunavir/ritonavir have similar effectiveness for patients starting HIV treatment for the first time.

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