Magnitude of "Virologic Blips" is Associated with a Higher Risk of Virologic Rebound in HIV-Infected Individuals: A Recurrent Events Analysis

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Objective

This study investigated whether "virologic blips" are associated with a higher risk for virologic rebound in HIV-infected individuals.

Main Finding

"Blips" ≥ 500 copies/mL were associated with an increased virologic rebound risk in HIV-infected individuals.

Background

Virologic Blips are intermittent increases in plasma HIV-1 RNA among patients who have achieved virologic suppression.

Importance of this Study

- Some patients who have achieved virologic suppression through combination antiretroviral therapy (cART) experience intermittent virologic blips
- Published literature on this topic is conflicting – some studies report an association and others none. This is in part because of inconsistencies in the definitions of "blips" and "virologic failure".
- Most literature on virologic blips is from the early cART era.
- This is the first study to use recurrent event methodology, which permits the inclusion of multiple periods of suppression from each individual in the analysis. This strengthens statistical power.

How this Study was Conducted

- This study was retrospective and data was analyzed from the CANOC collaboration, an interprovincial collaborative cohort of HIV-positive individuals on antiretroviral therapy in Canada.
- CANOC compiled HIV clinical, virological, immunologic, and demographic data from 8 cohorts across British Columbia, Ontario, and Quebec.
- 3,550 individuals from the CANOC collaboration achieved virologic suppression and were included in the analysis.
- The median follow-up duration was 2.7 years.

Study Results

- Only 14% of the virologic rebounds observed were preceded by a virologic blip.
- "Blips" of 500-999 copies/mL (≥ 500 copies/mL) were significantly associated with virologic rebound.
- Patients whose HIV-1 RNA was measured with the Amplicor assay (an ultrasensitive test) were half as likely to experience blips.

Implications

- HIV-1 RNA assay type should be considered in clinical guidelines as it was an important test for determining blip rates.
- Further investigation into the correlates of blips is warranted to confirm evidence that blips represent biological phenomena rather than random fluctuation.