

The Occurrence of AIDS-defining illnesses and Serious non-AIDS Clinical Events in persons with and without Transiently Elevated HIV Load ('blips'): A case-control Study

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Background: Mortality in HIV-infected individuals due to non-AIDS clinical events is increasing following the advent of HAART. One proposed mechanism is generalized immune activation, which may involve transient HIV RNA elevations ('blips') in its causal pathway.

Objectives: To investigate the occurrence of AIDS-defining opportunistic illnesses ('AIDSIs') and serious non-AIDS clinical events ('SNADEs') in a treatment-naïve cohort comparing patients with and without blips.

Methods: Retrospective study of treatment-naïve patients between 1996-2011. We collected medical information, socio-demographic information, and laboratory data. Blips were defined as an elevation in HIV viral load above the limit of detection and less than 1000 copies, between undetectable viral load measurements. SNADEs were defined as major cardiovascular events, chronic kidney disease >stage 3 or ESRD, decompensated cirrhosis, liver steatohepatitis, non-AIDS defining malignancies, osteoporosis/osteopenia, fragility fractures, neurocognitive impairment, and serious bacterial events requiring hospitalization. Clinical Events were defined as SNADEs and AIDSIs.

Results: 618 patients were identified of whom 602 had adequate medical information. The median age of the treatment-naïve cohort was 34.7 years; 65.8% were male; 49% white, 49% African-American, 2% other. The median length of follow-up was 10.3 years (25-75 interquartile range= 5.6 – 14.3 years). 18.8% of patients had at least one blip. 17.8% of patients had intermittent elevation of viral load. 22.9% of patients had measurable viral load for the majority of time. 40.5% of patients had adequate viral control. 41.9% of patients had at least 1 clinical event. 33.7% of patients had at least one SNADE, and 12.9% of patients had at least one AIDSIs. There is a trend for fewer clinical events in persons without blips compared to those with blips (33.9% vs. 41.0%, p=0.19). There is a trend for fewer SNADEs in persons without blips compared to those with blips (28.1% vs. 34.8%, p= 0.20). There was a trend for fewer AIDSIs in persons with blips compared to those without blips (6.3% vs. 9.9%, p=0.25).

Conclusions: There is a non-significant trend towards having fewer SNADEs in patients that did not have blips. Having greater amounts of documented viral replication may place individuals at risk for more clinical events not due to AIDSIs.

Acknowledgement:

This study was supported in part by NIH grant T35 DK 60444