Higher pre-infection vitamin E levels are associated with higher mortality in HIV-1-infected Kenyan women: a prospective study. BMC Infect

Abstract:

BACKGROUND: Low vitamin E levels are often found in HIV-1 infection, and studies have suggested that higher levels may decrease the risk of disease progression. However, vitamin E supplementation has also been reported to increase CCR5 expression, which could increase HIV-1 replication. We hypothesized that vitamin E levels at HIV-1 acquisition may influence disease progression. METHODS: Vitamin E status was measured in stored samples from the last pre-infection visit for 67 Kenyan women with reliably estimated dates of HIV-1 acquisition. Regression analyses were used to estimate associations between pre-infection vitamin E and plasma viral load, time to CD4 count <200 cells/μL, and mortality. RESULTS: After controlling for potential confounding factors, each 1 mg/L increase in pre-infection vitamin E was associated with 0.08 log10 copies/mL (95% CI -0.01 to +0.17) higher set point viral load and 1.58-fold higher risk of mortality (95% CI 1.15-2.16). The association between higher pre-infection vitamin E and mortality persisted after adjustment for set point viral load (HR 1.55, 95% CI 1.13-2.13). CONCLUSION: Higher pre-infection vitamin E levels were associated with increased mortality. Further research is needed to elucidate the role vitamin E plays in HIV-1 pathogenesis.