Serum retinol and HIV-1 RNA viral load in rapid and slow progressors.

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Abstract

Few studies have addressed the relation between serum vitamin A levels and HIV disease progression. Thirty HIV-infected women in Rwanda were studied over a time span of 26 to 99 months. Fourteen subjects seroconverted and died of HIV-related disease at a mean of 44 months (range, 26-69 months) after their first HIV-positive test and were termed "rapid progressors," (RPs). A comparison group of 16 "slow progressors" (SPs) were HIV-positive at the time of their first HIV serology and had asymptomatic HIV infections at a mean of 96 months (range, 93-99 months) after their first HIV serology. Baseline mean serum retinol values were the same in RPs and SPs: 0.65 + 0.08 micromol/L versus 0.67 + 0.09 micromol/L (p = .7). Lower serum retinol levels were observed in RPs compared with SPs for the second and third measurements, obtained at a median of 12 and 24 months past baseline: 0.51 + 0.07 micromol/L versus 0.76 + 0.14 micromol/L (p = .3) and 0.44 + 0.09 micromol/L versus 0.64 + 0.08 micromol/L (p = .08), respectively. Median retinol levels for the third sample measurement were similar in RPs with lower viral load (LVL) and SPs (0.49 micromol/L and 0.52 micromol/L, respectively) compared with only 0.19 micromol/L in RPs with higher viral load (HVL; p = .02). A trend toward decreasing serum retinol levels and increasing HIV-1 RNA viral load was observed at the third sample measurement (p = .04). Subjects with LVL, higher serum retinol levels (> or =0.70 micromol/L), or both had more favorable rates of survival than subjects with HVL, low serum retinol levels (<0.70 micromol/L), or both. Although sample size does not permit definitive
conclusions, this study demonstrates an association of high HIV load, rapid progression, and low serum retinol late but not early in disease progression.