Observational longitudinal study

HIV viral load data was available from archived plasma from 1980 to 1985. Eligibility criteria included: 1) negative HIV test within 36 months preceding HIV diagnosis, 2) initial CD4 cell count ≥500/μL and albumin ≥3.5 g/dL with no evidence of drug hepatotoxicity or liver disease. Cases were censored to baseline AG quartiles. Outcome was diagnosis of AIDS according to CDC's 1983 case definition including CD4 cell count <200 cells/μL. Subjects were censored by the earliest date of death, last visit, or starting combination antiretroviral medications available after 1985. Factors related to AIDS progression were analyzed by Cox regression and Kaplan-Meier methods.

Results

Among participants in the U.S. Natural History Study (NHS), the albumin/globulin ratio (A/G) was significantly associated with African American race/ethnicity (Table 1). However, African Americans did not have a shorter time to the development of AIDS and remained free longer when compared to all others within lowest quartile of AG ratio (median 9.0 vs 6.7 years [log rank]).

Conclusions

1) Low AG ratio early in HIV infection appears to be a risk factor for disease progression. In our analysis, this risk was independent of HIV viral load.

2) B-cell dysfunction in patients in the early stages of disease may have prognostic significance. Immunoglobulin levels during stage 1 disease may be a component of the "immunologic set point" which predicts progression to AIDS.

3) A higher proportion of African Americans accounted for the lowest quartile of baseline AG ratio. However, African Americans overall did not experience a shorter progression to AIDS. This likely reflects previous observations that immunoglobulin levels tend to be higher among African Americans and with and without HIV. Thus, race needs to be considered when establishing cut-off values and clinical significance of immunoglobulin levels.

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