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MEETING ABSTRACTS Open Access

Nonlinear Burkitt lymphoma risk patterns with age and CD4 lymphocyte count among persons with AIDS in the United States

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Background

Trimodal age-specific incidence rates for Burkitt lymphoma (BL) were observed in the U.S. general population, particularly among men. Because BL is AIDS-related, it is not known whether trimodal incidence peaks occur independently of immunosuppression. We therefore investigated age-specific BL incidence in persons with AIDS (PWA).

Methods

Crude and adjusted incidence rates, rate ratios (IRR), and 95% confidence intervals (95% CI) for BL and other non-Hodgkin lymphomas (NHLs) diagnosed during 4-60 months following AIDS diagnosis in the United States HIV/AIDS Cancer Match study (1980-2005) were assessed by age and CD4 lymphocyte counts using Poisson regression models. Two-tailed p-values < 0.05 were considered statistically significant.

Findings

We analyzed 306 incident cases (22 cases per 100,000 person-years) diagnosed among 567,865 PWA. The adjusted incidence rate ratio for BL among males was 1.6 times that among females and among non-Hispanic Blacks 0.4 times that among non-Hispanic Whites, but it was unrelated to HIV-transmission categories. The age-specific incidence rates for BL revealed at least two and perhaps three peaks during the pediatric and adult/geriatric years, whereas the incidence rates for other NHLs increased from childhood to adulthood. Compared to PWA aged 32-39 years, the adjusted incidence rate ratio (IRR) for BL was significantly elevated among PWA aged 0-19 years (2.3, 95% CI 1.2-4.4). The adjusted IRR for BL among PWA aged 20-31 years was significantly decreased (0.6, 95% CI 0.4-0.8), but the adjusted IRRs for BL among PWA aged 40-51 years, 52-59 years, and aged 60 years or older were not significantly different (1.0, 95% CI 0.8-1.3), (0.8, 95% CI 0.4-1.4), and (1.4, 95% CI 0.7-2.7), respectively. The risk for BL among PWA with <50 CD4 lymphocytes/μL was 0.3 (95% CI=0.2-0.6) of those with ≥250 CD4 lymphocytes/μL, whereas the incidence for other NHLs rose with decreasing CD4 lymphocyte counts.

Interpretation

Our findings strengthen the notion that bi/trimodal BL may occur independently of immunosuppression. The deficit of BL at low CD4 lymphocyte counts suggests that functional CD4 lymphocytes may be required for BL to develop.

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