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MEETING ABSTRACTS Open Access

Elevated serum levels of CXCL13 precede HIV-associated non-Hodgkin's lymphoma

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Introduction

CXCL13 (BCA-1, BLC), a chemokine constitutively expressed by cells in secondary lymphoid organs, promotes the chemotaxis of B cells to secondary lymphoid organs. There is accumulating evidence that CXCL13 is aberrantly expressed in a variety of lymphomas; thus we sought to define the longitudinal expression pattern of CXCL13 preceding a non-Hodgkin's lymphoma (NHL) diagnosis in the setting of HIV.

Methods

A nested case-control study was conducted in the setting of two large prospective cohort studies of the natural and treated history of HIV and AIDS, the Multicenter AIDS Cohort Study (MACS) and the Women's Interagency HIV Study (WIHS). Archival, pre-cancer diagnosis serum specimens from NHL cases (180 MACS and 30 WIHS) and HIV-seropositive matched controls (180 MACS and 109 WIHS) were assayed for CXCL13 by ELISA. Visit-matched sera from case-control pairs were obtained when available from three time windows preceding NHL diagnosis in the case: 3-5 years pre-NHL (closest to 4 years), 1-3 years pre-NHL (closest to 2 years), and 0-1 year pre-NHL (closest to 0.5 year). These data were analyzed using multivariate conditional logistic regression models to obtain adjusted odds ratios (OR) and 95% confidence intervals (95% CI) for each unit increase in log-transformed CXCL13 for each of the three study visits.

Results

CXCL13 levels were significantly elevated at all three time points preceding the clinical recognition of NHL, 3-5 years: OR=3.66 (95% CI, 2.34-5.74); 1-3 years: OR=6.62 (95% CI, 3.78-11.6); and 0-1 year: OR=3.68 (95% CI, 2.27-5.98). Subgroup analyses revealed that CXCL13 was more strongly associated with systemic NHL compared to central nervous system NHL, and EBV-negative compared to EBV-positive tumors.

Conclusions

These data suggest that CXCL13 may be a biomarker for NHL in the setting of HIV, and is more strongly associated with systemic, EBV-negative tumors. Studies are currently under way to further characterize the role CXCL13, and its receptor CXCR5, in lymphomagenesis.

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