

Poster presentation

Peripheral blood CD4⁺ T-lymphocyte count influences cerebrospinal fluid cellular response in patients with HIV-related cryptococcal meningitis

DM Cecchini^{*1}, AM Cañizal², H Rojas², A Arechavala², R Negroni², MB Bouzas² and J Benetucci²

Address: ¹Hospital Muñiz, (Helios Salud and Cosme Argerich Hospital), Buenos Aires, Argentina and ²Hospital Muñiz, Buenos Aires, Argentina

* Corresponding author

from Ninth International Congress on Drug Therapy in HIV Infection
Glasgow, UK. 9–13 November 2008

Published: 10 November 2008

Journal of the International AIDS Society 2008, 11(Suppl 1):P252 doi:10.1186/1758-2652-11-S1-P252

This abstract is available from: <http://www.jiasociety.org/content/11/S1/P252>

© 2008 Cecchini et al; licensee BioMed Central Ltd.

Purpose of the study

Cerebrospinal fluid (CSF) leukocyte count in asymptomatic HIV-infected patients without central nervous system (CNS) opportunistic diseases has a positive correlation with peripheral blood CD4⁺ T-lymphocyte count. However, previous communications showed that this correlation is lost in patients with CNS opportunistic infections. This fact has been attributed to the low CD4 T-cell counts found in this population. These studies were undertaken in a low number of patients with different CNS opportunistic infections (cerebral toxoplasmosis, cryptococcal meningitis, Cytomegalovirus encephalitis, progressive multifocal leukoencephalopathy, tuberculous meningitis) considered altogether for the analysis. To date, no study has evaluated correlation between CSF leukocyte count and peripheral CD4⁺ T-lymphocyte count in a cohort of patients with a single CNS opportunistic infection. The objective of this study was to address this issue in patients with cryptococcal meningitis.

Methods

We prospectively collected pretreatment CSF and blood samples from antiretroviral naive HIV-positive patients with culture-confirmed cryptococcal meningitis attending at the Infectious Diseases Hospital "Francisco Muñiz", Buenos Aires, Argentina (period 2004–2006). CSF characteristics were analyzed. Peripheral blood CD4⁺ T-lymphocyte count was determined by flow cytometry (Ortho

Diagnostic Systems). Software: Statistix (linear regression analysis).

Summary of results

A total of 31 cases were included. Median CD4 T-cell count: 24/uL (range: 0–143). Median CSF leukocyte count: 10 cells/mm³ (range: 1–715); 97% with mononuclear predominance. A positive correlation was found between peripheral blood CD4⁺ T-lymphocyte count and the absolute CSF leukocyte count ($r = 0.44$; $p = 0.0123$) in the statistical analysis. A strong correlation was found between peripheral CD4⁺ T-lymphocyte count and the CSF leukocyte count in patients with cryptococcal meningitis.

Conclusion

This result suggests that, despite the advanced level of immunodeficiency observed in these patients, the peripheral blood CD4⁺ T-lymphocyte count has a major influence on the development of an inflammatory response in the CSF in patients with meningitis by *Cryptococcus neoformans*.

References

1. Spudich S, et al.: **Cerebrospinal fluid HIV infection and pleocytosis: relation to systemic infection and antiretroviral treatment.** *BMC Infectious Diseases* 2005, **5**:98.
2. Claes M, et al.: **Cerebrospinal fluid mononuclear cell counts influence CSF HIV-1 RNA levels.** *J Acquir Immune Defic Syndr Hum Retroviral* 1998, **17**:214-9.