

Cerebrospinal fluid cytokines, matrix metalloproteinases, HIV, and tuberculous meningitis

Sir,

Raj *et al.* reported on "cerebrospinal fluid cytokines, matrix metalloproteinases, HIV and tuberculous meningitis.^[1]" Raj *et al.* noted that "HIV infection did not affect a majority of the CSF cytokines and MMP levels in tuberculous meningitis (TBM) except for IL-1 β level.^[1]" In fact, many reports show that HIV infection results in alteration of CSF cytokine^[2] and matrix metalloproteinases.^[3] Juan *et al.* reported that "CSF INF-gamma levels (>6.4 IU/mL) are very valuable in TBM diagnosis.^[4]" The question is why the observation by Raj *et al.* is different. First, the confounding medical disorders, including to the opportunistic infection, should be well considered. For example, the Cryptococcal meningitis can affect the CSF cytokine,^[5,6] and cytokine therapy is also an alternative treatment for the Cryptococcal meningitis.^[7] A further study with control of confounding medical disorder and treatment in HIV-infected cases is suggested.

Sim Sai Tin, Viroj Wiwanitkit^{1,2,3,4,5}

Medical Center, Shantou, China, ¹Visiting Professor, Hainan Medical University, China, ²Visiting Professor, Faculty of Medicine, University of Nis, Serbia, ³Adjunct Professor, Joseph Ayobabalola University, Nigeria, ⁴Senior Expert, Surin Rajabhat University, Thailand, ⁵Honorary Professor, Dr. Dnyandeo Yashwantrao Patil Medical University, Pune, Maharashtra, India

For correspondence:

Dr. Sim Sai Tin, Medical Center, Shantou, China.
E-mail: simsaitin@gmail.com

References

1. Rai D, Garg RK, Mahdi AA, Jain A, Verma R, Tripathi AK, *et al.* Cerebrospinal fluid cytokines and matrix metalloproteinases

in human immunodeficiency seropositive and seronegative patients of tuberculous meningitis. *Ann Indian Acad Neurol* 2014;17:171-8.

2. Thea DM, Porat R, Nagimbi K, Baangi M, St Louis ME, Kaplan G, *et al.* Plasma cytokines, cytokine antagonists, and disease progression in African women infected with HIV-1. *Ann Intern Med* 1996;124:757-62.
3. Liuzzi GM, Mastroianni CM, Santacroce MP, Fanelli M, D'Agostino C, Vullo V, *et al.* Increased activity of matrix metalloproteinases in the cerebrospinal fluid of patients with HIV-associated neurological diseases. *J Neurovirol* 2000;6:156-63.
4. Juan RS, Sánchez-Suárez C, Rebollo MJ, Folgueira D, Palenque E, Ortuño B, *et al.* Interferon gamma quantification in cerebrospinal fluid compared with PCR for the diagnosis of tuberculous meningitis. *J Neurol* 2006;253:1323-30.
5. Naranbhai V, Chang CC, Durgiah R, Omarjee S, Lim A, Moosa MY, *et al.* Compartmentalization of innate immune responses in the central nervous system during cryptococcal meningitis/HIV coinfection. *AIDS* 2014;28:657-66.
6. Chang CC, Omarjee S, Lim A, Spelman T, Gosnell BI, Carr WH, *et al.* Chemokine levels and chemokine receptor expression in the blood and the cerebrospinal fluid of HIV-infected patients with cryptococcal meningitis and cryptococcosis-associated immune reconstitution inflammatory syndrome. *J Infect Dis* 2013;208:1604-12.
7. Jarvis JN, Meintjes G, Rebe K, Williams GN, Bicanic T, Williams A, *et al.* Adjunctive interferon- γ immunotherapy for the treatment of HIV-associated cryptococcal meningitis: A randomized controlled trial. *AIDS* 2012;26:1105-13.

Access this article online

Quick Response Code:



Website:

www.annalsofian.org

DOI:

10.4103/0972-2327.144312