

The Most Prevalent Consequence in People with Advanced AIDS Involves Opportunistic Brain Infection

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INTRODUCTION

Clinical characteristics and the Cerebro-Spinal Fluid (CSF) cytokine changes in Acquired Immunodeficiency Syndrome (AIDS) patients with tuberculous meningitis and cryptococcal meningitis in Central Nervous System (CNS) infections before and after treatment were investigated. The clinical records of 80 AIDS patients with CNS infections and 40 non-CNS infection patients hospitalized in the infection department of the first hospital of Changsha from February 2013 to March 2016 were retrospectively analyzed [1]. Forty one cases of AIDS complicated with tuberculous meningitis were enrolled as group A, 39 cases of AIDS complicated with cryptococcal meningitis as group B, and 40 cases of non-CNS infection with lumbar puncture indication as group C. The general data, clinical symptoms, CSF examination and prognosis of the three groups of patients were collected. Of the 80 patients, 56 patients were discharged from hospital (improvement group) and 24 died (death group) after treatment [2]. The concentrations of Interferon- γ (IFN- γ), Interleukin-6 (IL-6), Interleukin-10 (IL-10) and Tumor Necrosis Factor- α (TNF- α) in CSF were detected by enzyme linked immunosorbent assay. There were significant differences in clinical manifestations, CSF pressure, CSF leucocyte count, CSF glucose, CSF chloride and CSF protein between group A, group B and group C ($P < 0.05$). The concentrations of IFN- γ , IL-6, IL-10 and TNF- α in CSF of group A and group B increased significantly compared with group C ($P < 0.001$) [3]. The IL-6, IL-10 and TNF- α levels in CSF in the improvement group were significantly lower than those in the death group ($P < 0.001$), while the concentration of IFN- γ increased significantly ($P < 0.001$) [4]. CSF biochemistry is characterized by increased pressure, leucocyte count and protein, and decreased chloride and glucose. IFN- γ , IL-6, IL-10 and TNF- α in CSF have certain predictive value for poor prognosis of AIDS patients with CNS infection [5].

DESCRIPTION

Acquired Immunodeficiency Syndrome (AIDS) is a serious immunodeficiency disease infected by Human Immunodeficiency

Virus (HIV). AIDS patients are mostly promiscuous, multi-transfused, homosexual and intravenous drug addicted [6]. Sexual transmission is the main route of the transmission of HIV infection, while other routes are mother to child transmission, blood product transfusion, organ transplantation and drug use with syringes. At present, the number of AIDS patients worldwide has reached 37 million, and the incidence has increased year by year. AIDS is mainly manifested by fatigue, fever and other clinical symptoms, with the characteristics of slow onset and high fatality rate [7]. It mainly invades the immune system of patients, causing serious damage to their immune function. AIDS can gradually develop into a secondary infection, prone to various pathogenic bacteria infections. In clinical practice, Central Nervous System (CNS) infections are common in AIDS patients.

The CNS of the normal human body can resist the invasion of various pathogens, but AIDS patients have impaired immune function and decreased resistance, and the brain and spinal cord are easily infected by various pathogens, which in turn lead to CNS infection. Opportunistic CNS infection is the most common complication in patients with advanced AIDS [8]. CNS infections are usually encephalitis caused by bacteria invading the CNS and meningitis caused by spinal pachymeningitis or meninges. The most common CNS infection diseases in AIDS patients are tuberculous meningitis and cryptococcal meningitis. Tuberculous meningitis is a non-suppurative inflammation of CNS, mostly caused by the invasion of tubercle bacillus of the ependyma and meninge into subarachnoid space. Cryptococcal meningitis is a chronic inflammatory disease with chronic or subacute infection of CNS infected by *Cryptococcus neoformans* [9]. AIDS complicated with tuberculous meningitis or cryptococcal meningitis is the main cause of death. There is a close relationship between the human immune system and the nervous system, and when CNS infection occurs, the levels of various cytokines in the body will be abnormally expressed [10-13].

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CONCLUSION

At present, there is no report on the clinical characteristics and Cerebro-Spinal Fluid (CSF) cytokines changes in AIDS patients with tuberculous meningitis and cryptococcal meningitis. The aim of this study was to provide a feasible method for the early diagnosis and prognosis of AIDS patients with CNS infectious diseases by observing the clinical symptoms of AIDS patients with tuberculosis meningitis and cryptococcal meningitis and the significance of cytokines in CSF.

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