

## The Comparison of Leukemia Inhibitory Factor (LIF) Concentration in the Serum and Cerebrospinal Fluid of Children with Bacterial Meningitis

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### Abstract

**Background and objectives:** Meningitis is one of the most common infectious of the central nervous system (CNS), defined as an inflammation of the meninges. LIF is a potent pro-inflammatory factor. Cerebrospinal fluid (CSF) contains the growth factors and cytokines whose concentrations have been changed in most neurological diseases. The aim of this study was to determine the LIF concentration of serum and CSF in the children with bacterial meningitis.

**Material and Methods:** In this study, the total protein concentration (TPC) and LIF in the serum and CSF of normal subjects and children with bacterial meningitis were measured by enzyme linked immunosorbent assay (ELISA).

**Results:** the Values of serum TPC for children with meningitis ( $74.17 \pm 7.73$  g/L) and controls ( $73.50 \pm 7.28$  g/L) are not different significantly ( $P=0.7$ ), and the TPC in the CSF of children suffering from meningitis and controls are  $35 \pm 0.03$  and  $0.34 \pm 0.05$  g/L, respectively ( $P=0.65$ ). The concentration of serum LIF for children with meningitis ( $253 \pm 19.14$  ng/ml) is higher than that of controls ( $49.75 \pm 8.97$  ng/ml), and also the concentration of LIF in the CSF of the children with meningitis ( $116.25 \pm 8.60$  ng/ml) is significantly higher than that of controls which is  $9.04 \pm 1.83$  ng/ml ( $P < 0.001$ ).

**Conclusion:** The LIF concentration in the CSF and serum may provide additional information in the differential diagnosis of meningitis. It is also concluded that LIF could be significantly involved in the pathophysiology of meningitis.

**Keywords:** Serum, Cerebrospinal fluid, Leukemia inhibitory factor, Children, Bacterial meningitis