

Introduction

Bacterial meningitis is an inflammation of the meninges that occurs in response to infection with bacteria and/or bacterial products.

Bacteria require access to the meninges to cause meningitis. There are several mechanisms for entry. Bacteraemia can result in bacteria crossing the blood-brain barrier. This can only be accomplished by certain bacteria, most notably N. meningitidis and S. pneumoniae. Direct extension of otitis media or sinusitis to the central nervous system (CNS) may also occur.

Fever, neck stiffness, headache, vomiting, photophobia, blurring vision, convulsions and altered mental status are the most predominant symptoms for bacterial meningitis. A physical exam may reveal nuchal rigidity or positive Kernig's or Brudzinski's signs. CSF analysis is the main diagnostic test for meningitis.

Certain cytokines may contribute to the sequence of events that lead to meningeal inflammation in bacterial meningitis.

Interleukin-1 β (IL-1 β) is the main cytokine. High levels of IL-1 β can occur in the cerebrospinal fluid (CSF) of patients with acute infection of the central nervous system (CNS).

Aim of the Work

The purpose of this study was to measure the level of interleukin- 1 β (IL-1 β) in the CSF in response to treatment in patients with bacterial meningitis.

Patients and Methods

This study was conducted on 40 patients with bacterial meningitis who were recruited from Emergency unit, at Alexandria Fever Hospital. IL-1beta was measured in CSF before and after therapy. We were predicted outcome of disease in 3 groups (deaths, complete resolution, and complicated cases). CSF was collected in sterile tubes and IL-1 β in the CSF was assessed by enzyme linked immunosorbent assay (ELISA).

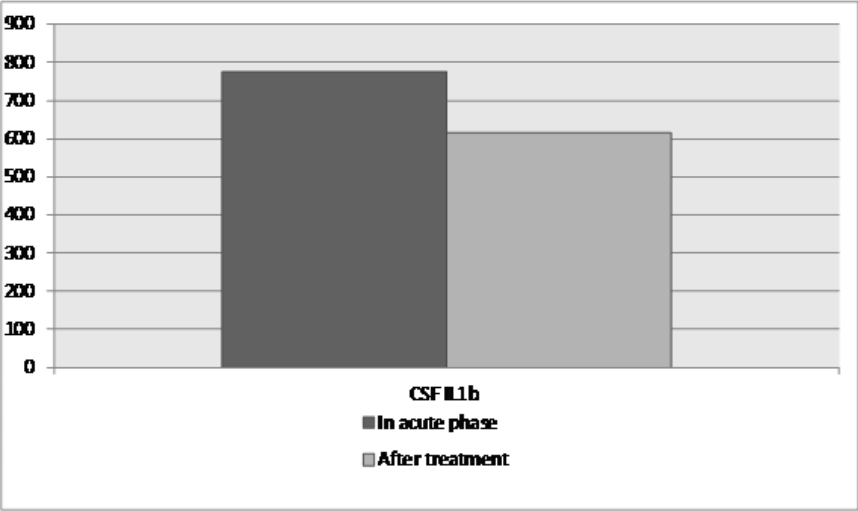
Results

Distribution of the studied cases according to patients' readiness to change lifestyle risk behaviors

	In acute phase	After treatment	t	p
CSF IL1B (p/ml)				
Min. – Max.	447.9-1075.9	329.0-898.8		
Mean $\pm$ SD.	775.7 $\pm$ 143.5	616.5 $\pm$ 168.3	9.119*	<0.001*
Median (IQR)	814.0 (660.4-869.6)	606.2 (485.8-775.0)		

IQR: Inter quar tilt rang SD: Standard deviation t: Paired t-test
P: p value for comparing between in acute and Aafter treatment *: Statistically significant at p $\leq$ 0.05

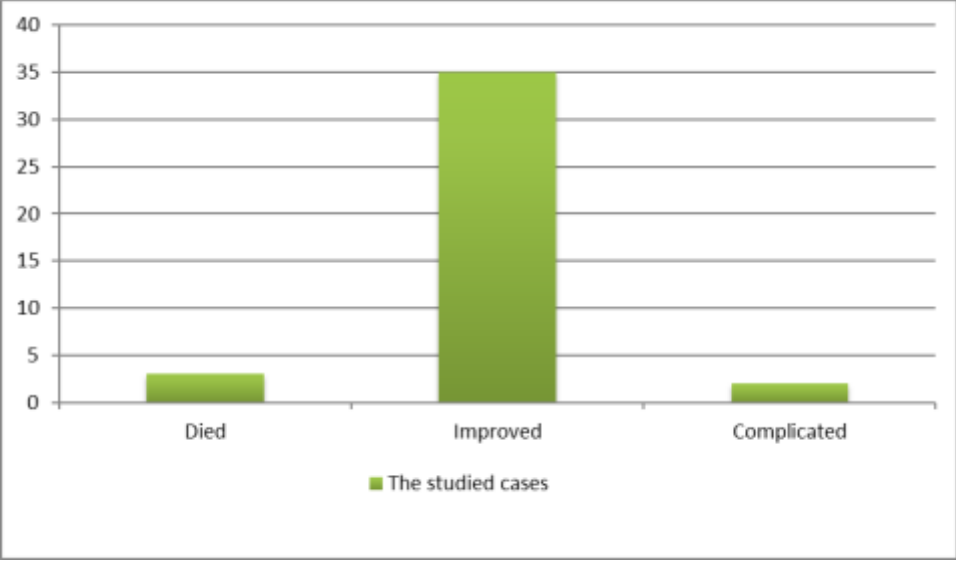
This table shown that there was highly statically significant difference between in acute phase and after treatment as regard CSF IL1 β



Distribution of the studied cases according to outcome

	No.	%
Outcome		
Died	3	7.5
Improved	35	87.5
Complicated	2	5.0

This table shows that according to outcome, there were 7.5% of the studied cases had died, 87.5% had were improved and 5.0% had were complicated.



Distribution of the studied cases according to outcome.

Conclusion

CSF IL 1beta might be used as a reliable marker of recovery of acute bacterial meningitis.