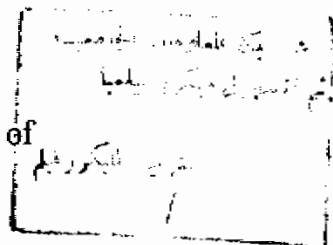


**CEREBROSPINAL FLUID ALPHA 1-PROTEINASE  
INHIBITOR (ALPHA 1-ANTITRYPSIN) AND FERRITIN  
LEVELS IN SEPTIC AND ASEPTIC MENINGITIS**

**THESIS**

Submitted for partial fulfilment of  
Master Degree in **Pediatrics**



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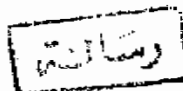
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***This Work is Dedicated to ...***

***My Loving Parents***



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## II

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## LIST OF ABBREVIATIONS

ADH	Antidiuretic hormone
A1Pi	Alpha 1 proteinase inhibitor
CSF	Cerebrospinal fluid
CT	Computerized tomography
IL	Interleukins
Ug/L	Microgram per liter
Mg/dL	Milligram per deciliter
PC	Personal computer
PG	Prostaglandins
PNL	Polymorphonuclear leukocytes
TCC	Total cell count
TNF	Tumour necrosis factor

**INTRODUCTION AND**

**AIM OF THE WORK**

## VIII

### INTRODUCTION AND AIM OF THE WORK

Mortality and long-term neurological sequelae are still frequent complications of meningitis despite effective antibiotic treatment. This suggests that pathogen-independent inflammatory mechanisms may play a role in this illness ( *Van-Wees et al., 1990* ) .

The differentiation of bacterial from non - bacterial meningitis has traditionally based on the clinical setting and cerebrospinal fluid studies , including the total and differential leukocytic count , Gram's stain , glucose and total proteins. Determination of new parameters may be of value for different types of meningitis ( *Ross and scheld, 1988* )

As a result of advances in understanding of pathogenesis and pathophysiology of meningitis , it now seems likely that the prognosis will improve in 1990s, as new methods for treatment and prevention of this disorder emerge ( *Levin and Heyderman , 1991* ) . The outcome of the disease depends mainly on early diagnosis and prompt treatment ; untreated bacterial meningitis is lethal infection that may evolve with catastrophic speed and cases treated early with appropriate antibacterial agents are curable especially with selection of the appropriate antimicrobials ( *Overturf and Hoeprich , 1983* ) .

## XI

In this study , CSF alpha 1 - proteinase inhibitor and ferritin are estimated in a trial for early diagnosis and differentiation between bacterial and non - bacterial meningitis .

# REVIEW OF LITERATURE

ANATOMIC CONSIDERATIONS  
IN  
CENTRAL NERVOUS SYSTEM INFECTIONS

RELATIONSHIPS OF BRAIN, MENINGES AND SKULL

The brain is suspended in CSF and is surrounded by three layers of meninges : the pia mater and arachnoid which constitute the leptomeninges and the dura mater (*Bargmann et al., 1982* )

The pia mater is continuous with the external surface of the brain and cord forming a cuff of meningeal tissue around penetrating vessels and merging with ependymal lining of the fourth ventricle at the foramina of Luschka and Magendie .The arachnoid encloses the brain more loosely, and between the pia and arachnoid, completely surrounding the brain and cord and communicating with the fourth ventricle, is the CSF filled subarachnoid space. Infection within this space may involve the entire surface of leptomeninges around the brain and may also cross the foramina of Luschka and Magendie to produce ventriculitis. (*John, 1990*)

CEREBROSPINAL FLUID.(CSF):

Cerebrospinal fluid is mainly formed by secretion from the choroid plexuses and circulates over the surface of the