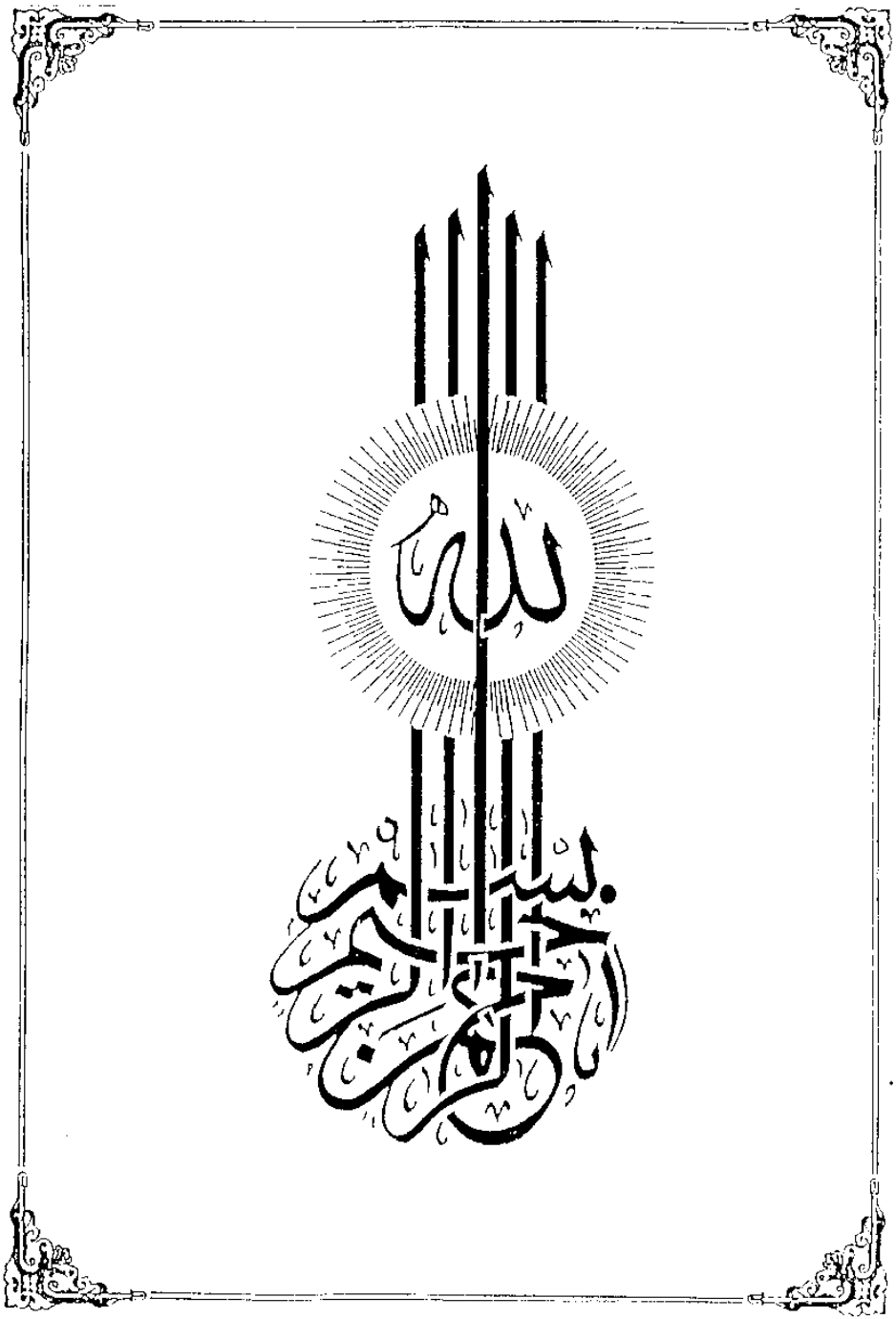
بسم الله الرحمن الرحيم

﴿وما أوتيتم من العلم إلا قليلا﴾

" الإسراء ٨٥ "

TO MY PARENTS AND FAMILY



NEUTROPHIL PHAGOCYTIC FUNCTION IN NEONATAL SEPTICEMIA

Thesis

Submitted for partial fulfilment of Master Degree in Pediatrics

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CONTENTS

LIST OF ABBREVIATIONS

ANC	:	Absolute. neutrophilic Count.
CRP	:	C-reactive protein.
DIC	:	Disseminated intravascular Coagulation.
EOD	:	Early onset disease.
ET	:	Exchange transfusion.
G.A	:	Gestational age.
GBS	:	Group. B streptococci.
GIT	:	Gastrointestinal tract.
IVIG	:	Intravenous immunoglobulins.
LOD	:	Late onset disease.
MPO	:	Myeloperoxidase.
NICU	:	Neonatal Intensive Care Unit.
NSP	:	Neutrophil storage pool.
PMNLs	:	Polymorphonuclear Leucocytes.
RDS	:	Respiratory distress syndrome.
TLC	:	Total Leucocytic Count.

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Introduction:

The incidence of neonatal septicemia varies between 1 and 10 per 1000 live births **(Klein et al., 1983).** The mortality exceeded 90% prior to antibiotics, but now it varies between 20% and 50% **(Speer et al., 1985).**

Newborn infants are known to be particularly susceptible to bacterial infections **(Sacchi et al., 1982).** The most important neonatal factor predisposing to infection is prematurity or low birth weight; there is a 3 to 10 fold higher incidence of sepsis in these infants than in full-term normal birth weight infants **(Gotoff, 1992).**

The function of the immune system is to protect the body from damage caused by invading micro-organisms. This defensive function is performed by various cellular and humoral components which interact with each other, producing a co-ordinated immune response, directed towards eliminating the pathogen or minimizing the damage it causes **(Aloisi, 1988).**

Neutrophils through phagocytosis serve a protective function to the body by ingestion and killing of invading microbes **(Griffin, 1982).**

The newborn's inflammatory response to infection may be impaired. There is an evidence of defective polymorphonuclear leukocyte functions in newborn infants in their defense against microbial infection **(Miller, 1979).**

Aim of the work:

The aim of this study is to assess the neutrophil phagocytic function of neonates in cases of septicemia.

REVIEW OF LITERATURE

CHAPTER I

NEONATAL SEPTICEMIA

. Definition:

Neonatal septicemia is a clinical syndrome characterized by systemic signs of infection and accompanied by bacteremia occuring in the first month of life **(Klein and Marcy, 1976).**

. Incidence:

The incidence of neonatal septicemia has been estimated to range from 1- to 10- per 1000 live births **(Klein et al., 1983).**

Eisenfeld et al., (1983) suggested that the incidence of neonatal septicemia may be even higher than is currently appreciated. Bacteria were isolated from the blood or cerebrospincal fluid of 41% of neonates who died within 28 days of life. In two thirds of these neonates, post-mortem cultures provided the only evidence of bacterial infection.

Pierce et al., (1984) reported that the incidence of neonatal septicemia has not decreased during the post decade, and may even has increased because of the development of life support techniques that have permitted

the survival of the extremely premature or otherwise high-risk neonate.

. Aetiology:

I- Modes of Infection:

a- Prenatal:

Transplacental transmission of bacteria during an apparent maternal illness is difficult to establish, but it has been documented in patients infected with *listeria monocytogenes* **(Albritton et al., 1976).**

Ascending infection is the most common route by which bacteria gain access to the unborn infant. Intra-uterine neonatal colonization and infection is more common following rupture of membranes, particularly when the duration of rupture exceeds 24 hours. Subsequent aspiration of such contaminated amniotic fluid into the infant's lungs and/or gastrointestinal tract, under conditions of fetal distress and asphyxia, predisposes to septicemia **(Naeye et al., 1971).**

b- Natal:

Feigin et al. (1987), reported that microorganisms-which are normal vaginal inhabitants can invade the newborn in some cases when the natural defence mechanisms are