INTERLEUKIN I IN NEONATES

THESIS

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By

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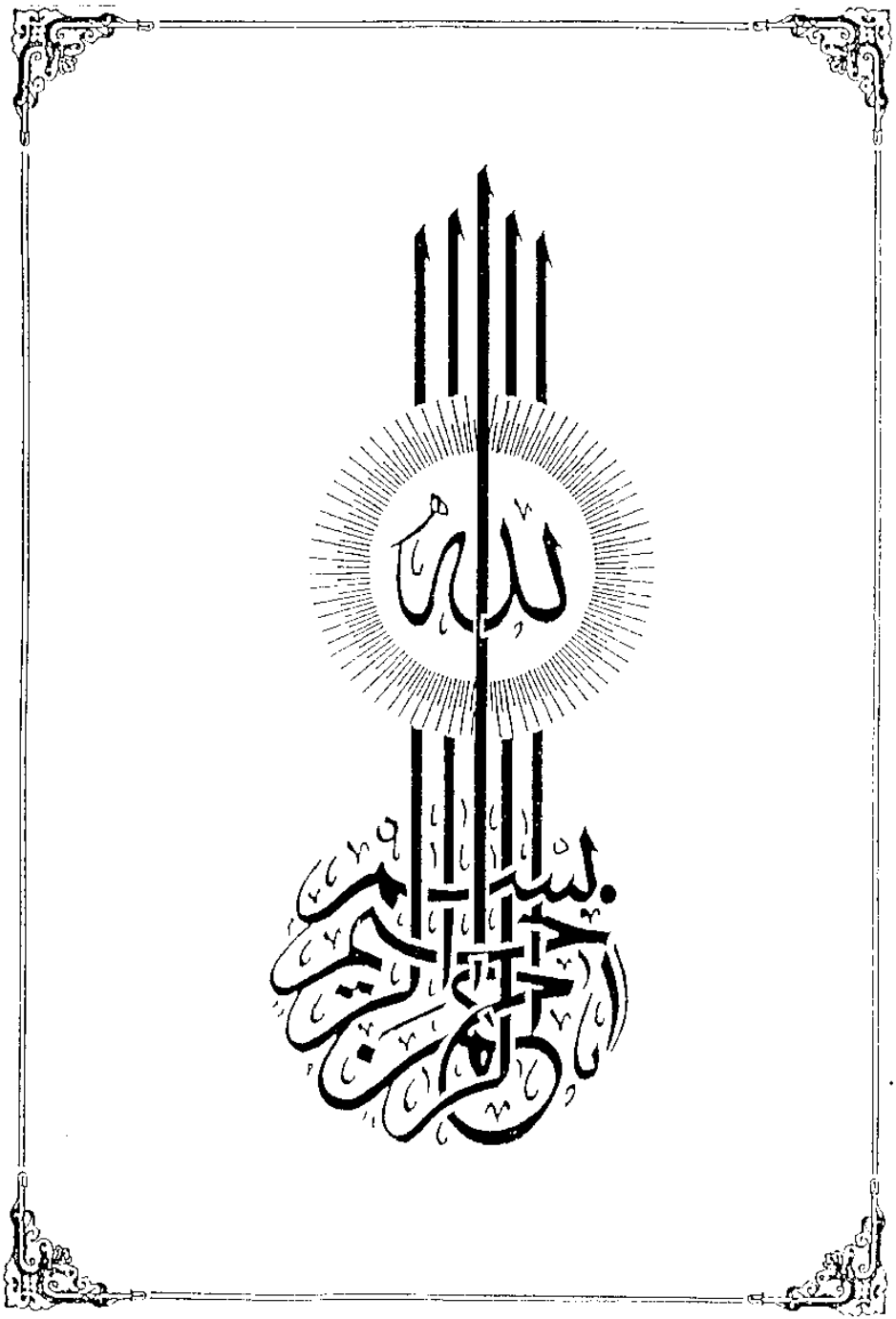
بسم الله الرحمن الرحيم

« قالوا سبحانك لا علم لنا إلا ما
علمتنا إنك أنت العليم الحكيم »

صدق الله العظيم

(سورة البقرة آية ٣٢)



To ...

My family and my husband.

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ABBREVIATIONS

AIDS	Acquired immunodeficiency syndrome
BAF	B cell activating factor
BCGF	B cell growth factor
CSF	Cerebrospinal fluid
CSF	Colony stimulating factor
CTL	Cytotoxic T lymphocytes
DTH	Delayed type of hypersensitivity
GBS	Group beta-hemolytic streptococci
GM-CSF	Granulocyte-macrophage, stimulating factor
HRP	Horseradish peroxidase
IEF	Isoelectrofocusing
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IL	Interleukins
IL1α	Interleukin 1 alpha
IL1β	Interleukin 1 beta
INF	Interferon
INFβ_2	Interferon β
INFγ	Interferon γ
Kd	Kilodaltons
LAF	Leukocyte activating factor
LAK	Lymphokine activated killer cells
LBW	Low birth weight

LGL	Large granular lymphocytes
LPS	Lipopolysaccharide
MDP	Muramyl dipeptide
MHC	Major histocompatibility complex
NICU	Neonatal intensive care unit
NK	Natural killer cell
PAF	Platelet activating factor
PCL	Precursor cytotoxic lymphocytes
PGE_2	Prostaglandin E_2
PHA	Phytohemagglutinin
PMA	Phorbol myristate acetate
SD	Standard deviation
Th	T-helper cell
TMP	Tetramethyl benzidine
TORCH	Toxoplasmosis, rubella, cytomegalovirus, herpes
V. LBW	Very low birth weight
WBC	White blood cells

Introduction

INTRODUCTION

Production of interleukin 1 (IL-1) by activated macrophage augments T cell participation in antigen recognition and thereby help to initiate B cell transformation to antibody (*James,* 1990).

Molecular characteristics of interleukin 1 (IL-1) cDNA for the predominant form of interleukin 1 (IL-1) has been recently cloned from human peripheral blood monocytes (*Auron et al.,* 1984).

The protein consists of 269 amino acids with no obvious signal or cleavage peptide sequence (*Van Damm et al.,* 1986).

Interleukin 1 (IL-1) is induced by a wide variety of microbial products (lipopolysaccharide antigen) (*Dinarello and Woff,* 1982), endogenous host products, C5a, bile salts, inflammatory steroids, epinephrine, progesterone (*Dillard and Bodel,* 1970; *Flyn,* 1984; *Cannon and Dinarello,* 1986) and environmental factors (ultraviolet radiation) (*Gahring et al.,* 1984).

When interleukin 1 (IL-1) mediated mechanisms occur in an infectious challenge, they represent beneficial adaptation. In excess they become pathological conditions themselves (*Fontana,* 1982).

Tumor necrosis factor alpha, interleukin 1 beta, and interleukin 6 are thought to be involved in the pathogenesis of sepsis with Gram-negative bacteria (*Martens Van Raan et al.,* 1993).

Reduced secretion of interleukin 1 by neonatal monocytes. Monocytes isolated from peripheral blood of preterm and term newborn infants data provide evidence that neonatal monocytes have a profoundly impaired cytokine secretion (*Peters et al.,* 1993).

Inappropriate local secretion of interleukin 1 (IL-1) in pathogenesis of rheumatoid arthritis (*Fontana,* 1982) and has been implicated in vasculitis and fibrosis (*Dinarello,* 1985).

Protein malnourished patients are immunocompromised by an inability to produce interleukin 1 (IL-1) the problem can be corrected by dietary intervention (*Holfman Goetz et al.,* 1981).

Aim of the Work

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The aim of this work is to study the level of interleukin 1: "IL-1" in sick versus normal neonates so as to evaluate its role as an indicator of sepsis in the newborn.