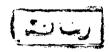
INTERLEUKIN I IN NEONATES



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 أية 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 alphaIL1β Interleukin 1 beta

 $\begin{array}{ll} \text{INF} & \text{Interferon} \\ \text{INF}\beta_2 & \text{Interferon } \beta \\ \text{INF}\gamma & \text{Interferon } \gamma \end{array}$

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

PGE₂ Prostaglandin E₂

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 Gramnegative 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

AIM OF THE WORK

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.