LEUKOCYTE ALKALINE PHOSPHATASE ACTIVITY IN THE DIAGNOSIS OF NEONATAL BACTERIAL INFECTION

THESIS

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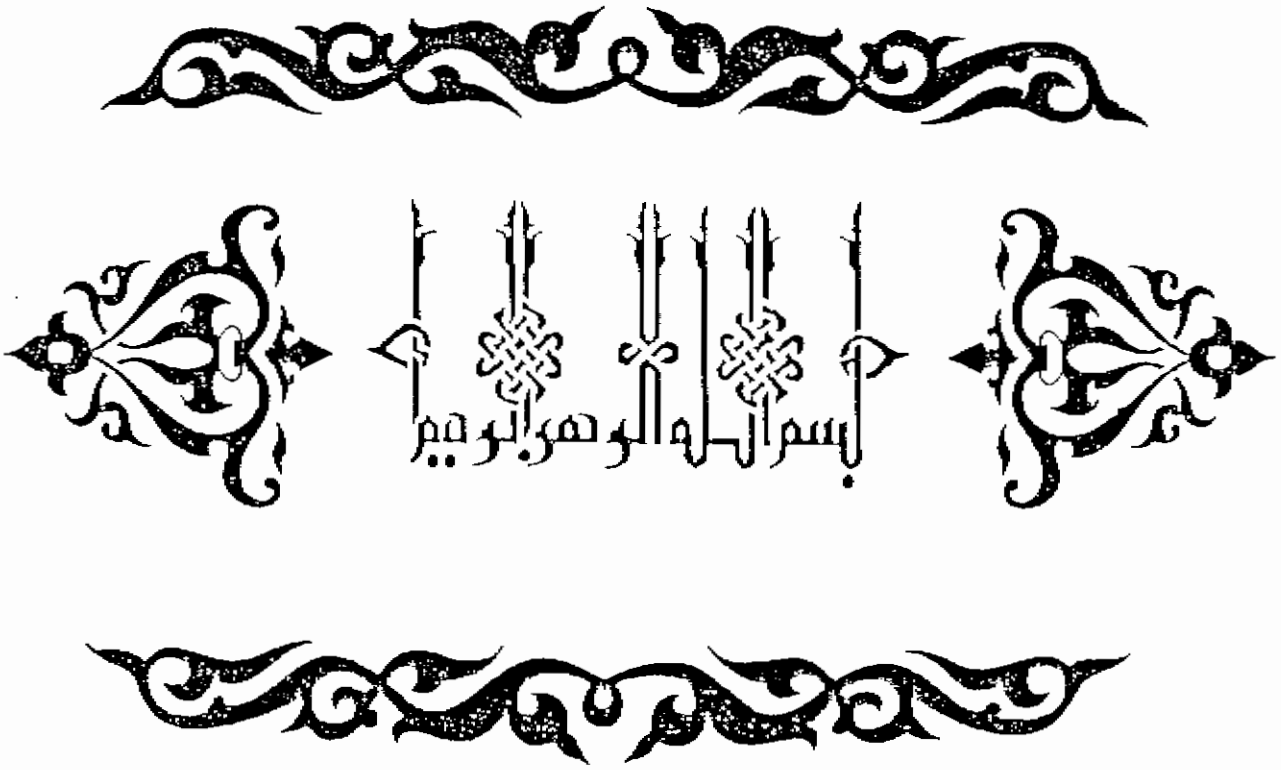

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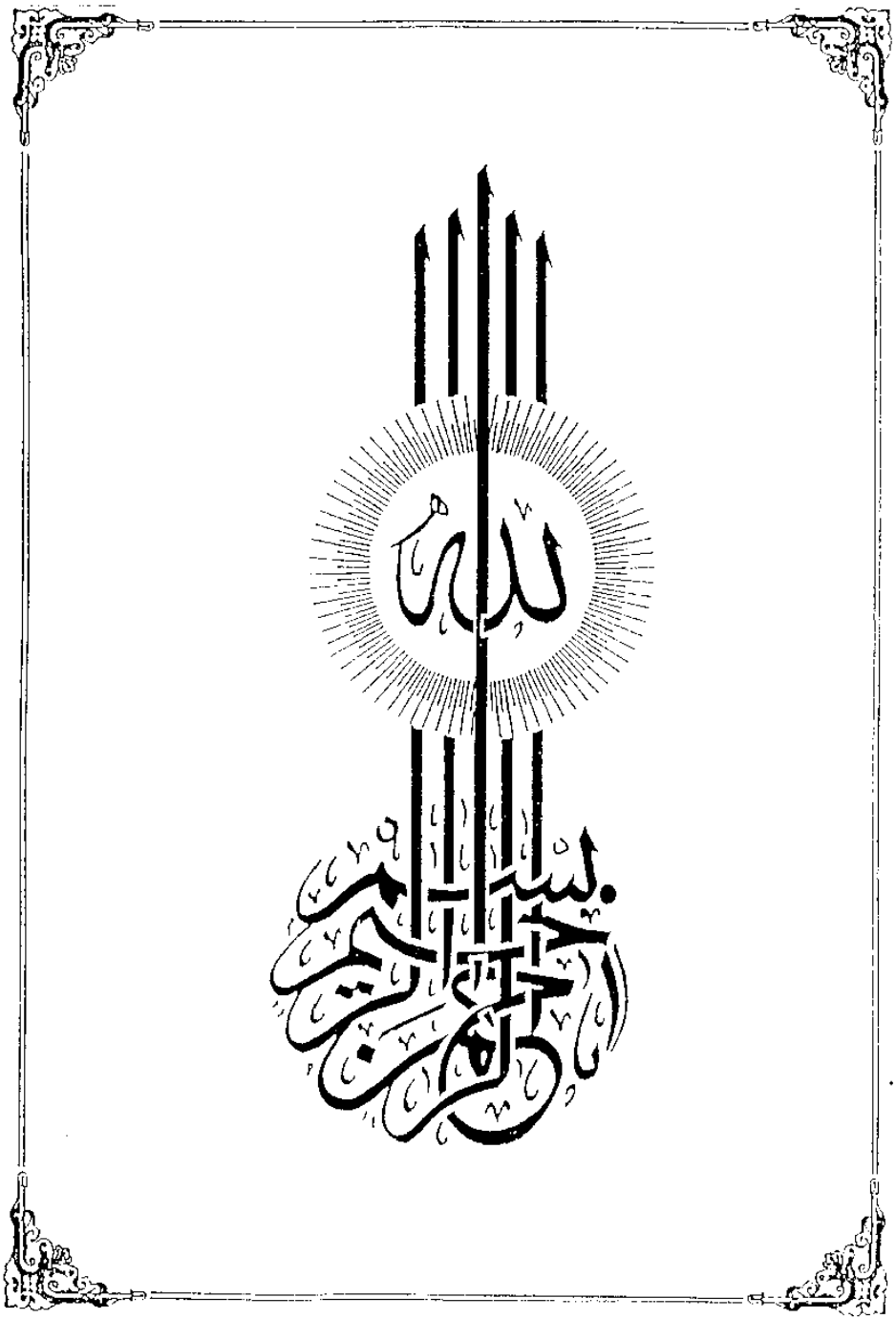

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Errata

Page	Paragraph	Line	Error	Correction
18	1	2	St.	Strept
18	3	4	Hb	HpT.
28	1	3	St.	Strept
40	1	5	Poloshuk	Polishuk

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CONTENTS

Central Library - Ain Shams University

Subject	Page

y - Ain Shams University

List of Tables

Central Library - Ain Shams University

List of Figures

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List of Abbreviations

ACTH = Adrenocorticotrophic Hormone.
ADP = Adenosine Diphosphate.
AMP = Adenosine Monophosphate.
ATP = Adenosine Triphosphate.
CIE = Counter-Immunoelectrophoresis.
CRP = C-Reactive Protein.
CSF = Cerebrospinal Fluid.
C.T = Computerized Tomography.
D = Died.
ELISA = Enzyme Linked Immunosorbent Assay.
EST = Esterases.
F = Female.
GAP = Granulocyte Alkaline Phosphatase.
GBS = Group B Streptococcus.
LAP = Leukocyte Alkaline Phosphatase.
M = Male.
MPO = Myeloperoxydase.
NBT = Nitroblue Teterazolium.
NK = Natural Killer.
PAS = Polysaccharides.
S = Survived.
SAP = Serum Alkaline Phosphatase.
SB = Sudan black.
SD = Standard Deviation.
TLC = Total Leukocytic count.

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INTRODUCTION
AND
AIM OF THE WORK

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INTRODUCTION

The diagnostic approach to neonatal bacterial infections is still a major problem facing personnels working in the neonatology field. The paucity, subtility and non-specificity of the initial clinical manifestations, in addition to the steeply downhill course with a high possibility of a fatal outcome, dictated the need for fast as well as definite diagnostic parameters for such a condition (Quie, 1976).

Despite the advent of highly effective antibiotics and employing technologically advanced life supporting facilities in the management of these infections, an early diagnosis still plays a critical role if morbidity and mortality rates are to be improved (Yoder and Polin, 1986). Among the new methods which proved useful for early diagnosis of neonatal sepsis are serum C-reactive protein, (Shatla et al., 1981) IgM globulin, alpha-1 acid glycoprotein and fibrinogen (Shatla et al., 1988).

Interest in the activity of alkaline phosphatase of human leukocytes has grown rapidly with the increasing number of reports demonstrating significant shifts of activity in different clinical states. It has shown to be increased in bacterial infections of the adult, as determined by cytochemical methods (Kaplow, 1968). However, only few reports investigated its role in neonatal bacterial infections (Donato et al., 1979).

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AIM OF THE WORK

The aim of the present work is to determine the leukocyte alkaline phosphatase activity and its value in the diagnosis of neonatal bacterial infections, comparing the results with those obtained by using routine parameters of diagnosis, mainly total leukocytic count and blood culture.

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NEONATAL BACTERIAL INFECTIONS

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NEONATAL BACTERIAL INFECTIONS

Systemic bacterial infections during the first month of life have remained a major cause of infant morbidity and mortality despite the development of broad spectrum antimicrobial agents and technologic advancements in life support therapy (Freedman et al., 1981).

The etiology of neonatal bacterial infections has varied considerably. Before 1943, β.haemolytic streptococci (primarily group A) were the most common pathogen. Staphylococci were a problem, particularly in older newborns in the 1950's. Gram-negative bacteria predominated in the 1960's. Over the last few years group B-β haemolytic streptococci have emerged as the leading cause of neonatal sepsis, with gram-negative organisms a close second (Mc Cracken, 1976).

Etiology of neonatal Septicemia :

The division line between early and late onset neonatal septicemia has usually been at 5-7 days of age, although some authors have preferred to group cases according to onset before or after the first 48 hours of life (Plazek and Whitelow, 1983). These infections seem to originate from the birth canal, and the causative organisms may colonize the infant before delivery or alternatively may be introduced with obstetric examination or procedures (Vesikari et al., 1985). Primary sepsis occurring under 48 hours, is usually caused by organisms contracted in the birth canal (E. Coli, Klebsiella, enterococci, group B streptococci) while secondary sepsis occurring over 48 hours is more frequently due to organisms contracted in the nursery (Staphylococcus aureus, Pseudomonas, Flavi bacterium) (Cloherty and Stark, 1980).

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