CORD AND MATERNAL SERUM TRANSFERRIN AS INDICATOR OF FETAL MALNUTRITION IN DIFFERENT SOCIOECONOMIC STATES

THESIS

Submitted for

Ph.D. Degree in Childhood Studies – Medical Department

Presented by

NAGWA AHMED ISMAIL AHMED

M.B., B.Ch., M.Sc. (Pediatrics)

Supervised by

PROF. DR. KARIMA ABD EL-KHALEK
Professor of Pediatrics
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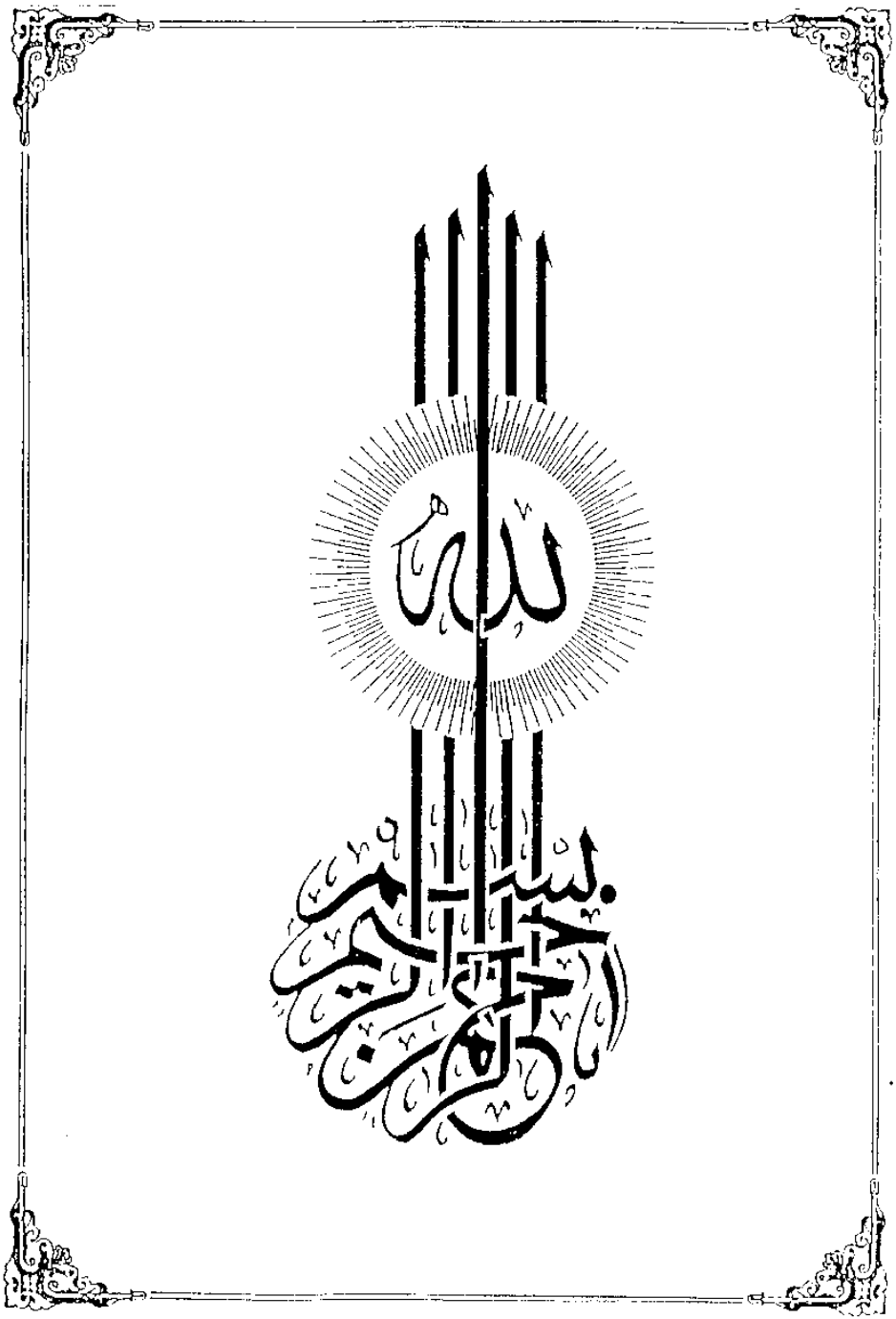

بسم الله الرحمن الرحيم

« وما أوتيتم من العلم إلا قليلا »

صدق الله العظيم

(سورة الإسراء آية ٨٥)

DISCUSSION AND JUDJMENT COMMITTEE

The vice-president for higher studies and research of Ain-Shams University has approved to form the following committee for the discussion of ~~Mr~~ DR Nagwa Ahmed Ismail

1. Dr Karima Abd ElkKhalek - Professor of Pediatrics Faculty of Medicine Ain Shams University. Chairman. Karima. A

2. Dr Saadia Abd El Fatah - Professor of Pediatrics Faculty of Medicine Ain Shams University. Member. Saadia Abd El Fatah

3. Dr Zeinab El Ramley - Professor of Pediatrics Faculty of Medicine Al Azhar University. Member. Zeinab El Ramley

4. .....

.....Member.....

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Candidate
Nagwa Ahmed

CONTENTS

LIST OF ABBREVIATIONS

A	Alanine
AGA	Appropriate for gestational age
EDTA	Ethylenediamine tetra acetic acid
G	Glycine
IUGR	Intrauterine growth retardation
LBW	Low birth weight
LGA	Large for gestational age
LMP	Last menstrual period
MCHC	Mean corpuscular hemoglobin concentration
MCV	Mean corpuscular volume
NADH	Nicotinamide adenine nucleotide
SGA	Small for gestational age

LIST OF TABLES

LIST OF FIGURES

Introduction

INTRODUCTION

Iron is virtually an important element in human metabolism. It plays a major role in erythropoiesis, as well as it is intimately involved in many other intracellular processes (*Wood et al.*, 1990).

Iron acts as a cofactor in several enzymes in the respiratory electron transport chain. Adequate heme and iron levels are necessary for the control of cytoplasmic and mitochondrial protein synthesis (*Schultz and Freedman,* 1987). Its ability to coexist in both ferric and ferrous state underlies its importance in oxygen and electron transport systems concerned with cellular energy production (*Pippard and Hoffbrand,* 1989).

Most of iron in human is in the form of hemoglobin with a smaller, but significant, amount in myoglobin. An additional portion of iron is utilized to and with cofactors essential to basic metabolic oxidation and reduction reactions (*Wood,* 1990).

Many of the physiological active iron compounds in the body are heme proteins, however there are also specialized protein of iron transport and storage forms of the mineral as well as non-heme enzymes