

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

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بسم الله الرحمن الرحيم

« وما أوتيتم من العلم إلا قليلا »

صدق الله العظيم

(سورة الإسراء آية ٨٥)

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*Candidate
Nagwa Ahmed*

CONTENTS

	Page
Introduction	1
Aim of Work	4
Review of Literature	5
• <i>Iron Balance</i>	5
Obligatory Iron Loss	5
Iron Requirements	7
• <i>Iron Metabolism</i>	11
Iron Absorption	11
Intestinal Absorption of Iron during Pregnancy	34
Iron Excretion	34
• <i>Body Iron Pools</i>	36
Iron Containing Compounds	37
1. Iron Containing Compounds with Metabolic or	
2. Iron-Containing Proteins Associated with Iron Storage	49
3. Iron-Containing Proteins Associated with Iron	
Body Iron In Fetus and Newborn	72
Hematologic Aspects of Maternal Health and Disease	82
• <i>Stages of Iron Deficiency</i>	84
• <i>Iron Deficiency Anemia</i>	88
• <i>Socioeconomic Correlates of Iron Deficiency Anemia</i>	107
• <i>The Relation between The Socioeconomic Status of The Mother and Weight of Newborn</i>	109
Subjects and Methods	112
Results	118
Discussion	164
Summary and Conclusion	189
Recommendations	194
References	196
Arabic Summary	

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

	Page
Table (1): Iron requirements (mg) during pregnancy.	10
Table (2): Relative bioavailability of iron in the presence of various dietary components.	28
Table (3): Distribution and function of iron compounds.	48
Table (4): Hemoglobin values in the fetus.	72
Table (5): Relationship of birth weight to body iron at birth.	76
Table (6): Scoring system of the three socioeconomic classes.	117
Table (7): Clinical and laboratory data in all cases.	119
Table (8): Weight, sex, gestational age and laboratory data of newborn infants and their mothers in the low socioeconomic class group.	120
Table (9): Weight, sex, gestational age and laboratory data of newborn infants and their mothers in the middle socioeconomic class group.	121
Table (10): Weight, sex, gestational age and laboratory data of newborn infants and their mothers in the upper middle socioeconomic class group.	122
Table (11): Weight of newborn infants in different socioeconomic classes.	123
Table (12): The gestational age of newborns in different socioeconomic classes.	124
Table (13): Maternal hemoglobin in the different socioeconomic classes.	127
Table (14): Cord hemoglobin in the different socioeconomic classes.	128
Table (15): Maternal transferrin in the different socioeconomic classes.	129

	Page
Table (16): Cord transferrin levels in different socioeconomic classes.	130
Table (17): Comparison between fullterm and preterm newborns in different socioeconomic classes as regards maternal hemoglobin, cord hemoglobin, maternal transferrin and cord transferrin.	140
Table (18): Weight, maternal and cord hemoglobin, maternal and cord transferrin in preterm newborns in different socioeconomic classes.	145–146
Table (19): Weight, maternal and cord hemoglobin, maternal and cord transferrin in fullterm newborns in different socioeconomic classes.	147–148
Table (20): Comparison between fullterms and preterms as regards maternal hemoglobin, cord hemoglobin, maternal transferrin and cord transferrin.	149
Table (21): Weight, maternal and cord hemoglobin, maternal and cord transferrin in SGA, AGA and LGA in preterm newborns.	150–151
Table (22): Comparison between different gestational ages of fullterm neonates as regards maternal hemoglobin, cord hemoglobin, maternal transferrin and cord transferrin.	152–153
Table (23): Comparison between different gestational ages of all cases as regards maternal hemoglobin, cord hemoglobin, maternal transferrin and cord transferrin.	154–155

LIST OF FIGURES

	Page
Fig. (1): Control of iron absorption by mucosal cell of the duodenum and jejunum	13
Fig. (2): Pathways of internal iron exchange.	38
Fig. (3): Primitive and definitive globin chain synthesis embryonic, fetal and postnatal periods in relation to changes in the site of erythropoiesis.	42
Fig. (4): Developmental control of globin gene expression in man.	46
Fig. (5): Stages of iron deficiency.	87
Fig. (6): Percentile curves constructed for classification of newborns by birthweight and gestational age.	114
Fig. (7): Mean neonatal weight in the three socioeconomic classes.	125
Fig. (8): Mean gestational age in the three socioeconomic classes.	126
Fig. (9): Mean maternal and cord hemoglobin in the three socioeconomic classes.	131
Fig. (10): Mean maternal and cord transferrin in the three socioeconomic classes.	132
Fig. (11): Correlation between maternal and cord transferrin.	133
Fig. (12): Correlation between cord hemoglobin and cord transferrin.	134
Fig. (13): Correlation between maternal and cord hemoglobin.	135
Fig. (14): Correlation between maternal hemoglobin and gestational age.	136
Fig. (15): Correlation between gestational age and cord hemoglobin.	137
Fig. (16): Correlation between gestational age and cord transferrin.	138

	Page
Fig. (17): Correlation between gestational age and maternal transferrin.	139
Fig. (18): Comparison of mean maternal transferrin between fullterms and preterms in the three socioeconomic classes.	141
Fig. (19): Comparison of mean maternal hemoglobin between fullterms and preterms in the three socioeconomic classes.	142
Fig. (20): Comparison of the mean cord hemoglobin between full and preterms in the three socioeconomic classes.	143
Fig. (21): Comparison of mean cord transferrin between fullterms and preterms in the three socioeconomic classes.	144
Fig. (22): Correlation between birth weight and maternal transferrin in fullterms.	156
Fig. (23): Correlation between birth weight and maternal transferrin in preterms.	157
Fig. (24): Correlation between birth weight and cord transferrin in fullterms.	158
Fig. (25): Correlation between birth weight and cord transferrin in preterms.	159
Fig. (26): Correlation between birth weight and maternal hemoglobin in fullterms.	160
Fig. (27): Correlation between birth weight and maternal hemoglobin in preterms.	161
Fig. (28): Correlation between birth weight and cord hemoglobin.	162
Fig. (29): Correlation between birth weight and cord hemoglobin.	163

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