

NUTRITIONAL PARAMETERS IN MOTHER AND INFANT

Thesis

Submitted In Partial Fulfilment of
M.S. Degree In
[Paediatrics]

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1989

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



TO
MY PARENTS

MY HUSBAND

AND
MY LOVELY SON

[[MAHMOUD]]

ACKNOWLEDGEMENT

I wish to express my gratefulness to late Professor **ESSAWY** who encouraged me a lot during his supervision and I owe him much he has done without which this thesis would have never come to light.

I wish to express my deep gratitude to Professor Dr. **FARIDA AHMED FARID**, Professor of Paediatrics, Faculty of Medicine, Ain Shams University, under whose guidance this work has been prepared.

I am, also deeply indebted to Professor Dr. **GALILA MOHAMED MOKHTAR**, Assistant Professor of Paediatrics Faculty of Medicine, Ain Shams University for her continuous and kind supervisions throughout this work. Many thanks for Dr. Galila.

CONTENTS

	<u>Page</u>
- INTRODUCTION AND AIM OF THE WORK-----	1
- REVIEW OF LITRATURE -----	
- Physiological review of materno-fetal nutritional interrelation-----	2
.. Factors affecting fetal growth -----	8
.. Maternal physiologic and metabolic adjustments----	10
.. Placenta in relation to nutrition-----	12
.. Factors affecting transport of nutrients across the placenta -----	14
.. Assessment of nutritional status of mother, fetus and newborn -----	25
- Nutritional elements in maternofetal endowment.	
.. Materno-fetal carbohydrate metabolism-----	31
.. Materno-fetal lipid changes-----	41
.. Materno-fetal aminoacids, and proteins regulation	61
.. Haemoglobins in the mother, embryo, and fetus----	70
.. Materno-fetal homeostasis of water and certain minerals (Sodium and Potassium)-----	76
.. Perinatal calcium homeostais and materno-fetal relationship -----	87
.. Phosphate in the mother and growing subject-----	98
- MATERIAL AND METHODS-----	103
- RESULTS -----	130
- DISCUSSION -----	160
- SUMMARY -----	175
- CONCLUSION -----	177
- REFERENCES-----	178
- ARABIC SUMMARY :	

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Composition of the fetus at term -----	76
2	The composition of fetal and maternal plasma at term in the human with some of the expected fetal concentrations-----	78
3	Phosphate measurement -----	126
4	Correlation between mean maternal and cord blood glucose, triglycerides, cholesterol and proteins values -----	144
5	Correlation between mean maternal and cord blood haemoglobin and haematocrit values----	145
6	Correlation between mean maternal and cord blood Sodium, Potassium, Calcium, and Phosphorus values -----	146
7	Relation between maternal and cord blood glucose levels in 16 pairs of cases-----	147
8	Relation between maternal and cord blood triglycerides levels in 16 pairs of cases--	148
9	Relation between maternal and cord blood cholesterol levels in 16 pairs of cases----	149
10	Relation between maternal and cord blood total proteins levels in 16 pairs of cases-	150
11	Relation between maternal and cord blood haemoglobin levels in 16 pairs of cases----	151
12	Relation between maternal and cord blood haematocrit values in 16 pairs of cases----	152
13	Relation between maternal and cord blood Sodium values in 16 pairs of cases-----	153
14	Relation between maternal and cord blood Potassium levels in 16 pairs of cases-----	154

<u>Table No.</u>		<u>Page</u>
15	Relation between maternal and cord blood Calcium levels in 16 pairs of cases-----	155
16	Relation between maternal and cord blood phosphorus levels in 16 pairs of cases--	156
17	Laboratory data of mothers-----	157
18	Laboratory data of cord blood -----	158

INTRODUCTION

Nutritional Parameters in Mother and Infant

Introduction

It is well known fact that maternal nutrition is a major determination of intrauterine fetal growth as well as postnatal growth and development. A reduced materno-fetal transfer of nutrients may cause variety of placental changes (Munro, 1980). Undernourished women and women living in poverty conditions in developing countries have a lower mean placental weight and decreased placental functions than well nourished women or women from higher income groups (Rooso 1980). Consequently these placental changes are reflected on the nutritional status and well being of the newborn. Hence determination of maternal nutrition will be of prime importance in assessing nutritional status of offsprings.

Aim of the work:

The aim of this work is to study the effect of maternal nutrition in correlation with neonatal nutrition by measuring common biochemical indices of nutritional status in maternal, and cord blood.

REVIEW OF LITERATURE

PHYSIOLOGICAL REVIEW OF MATERNO-FETAL NUTRITIONAL INTERRELATION

Factors affecting fetal growth:

Maternal diet and nutritional status often are considered to be important factors influencing fetal growth (Metcoff, et al., 1981). But there are numerous factors that interact to determine the progress and outcome of pregnancy (Kranse and Mahan, 1984). These factors have been studied for a number of years and among the most influential are general, maternal, placental and fetal factors. General factors discernible prior to or early in pregnancy, They include, physical, social, habits, demographic, obstetric, and certainty of dates.

Physical factors:

Like height and weight of the mother. Maternal pregravid body weight and calaris intake during pregnancy strongly influence fetal growth. Mothers pregravid body weights and net pregnancy weight gains had only a modest influence on birth weights (Richard, and Naeye, 1981).

Social factors affecting fetal growth:

Maternal status, social class, and education. Educated women of high social class known well not only the quantity of food they eat but also the quality which gives their correct requirements. They make a good spacing time between pregnancy and another which gives good health, for both mother and baby (Vanden Berg, 1981).

Race:

It is well known that American Blacks as a group are somewhat smaller at birth than American whites. Their smaller size at birth is due to shorter gestation (Naeye et al., 1971).

Habits:

Smoking or drinking excessively during pregnancy may also affect fetal growth (Kranse and Mahan, 1984). There is probably a mixture of nutritinal and direct anoxic/toxic effects.

Demographic/obstetric factors:

Age, parity, interval since previous pregnancy. One of studies compared a number of countries and

showed that in Japan, where the first pregnancy occurred typically in the late twenties, fewest still births occurred when the mother's age was in this range. In Western countries, the safest age range is 20 to 24 which is the most usual age range for the first pregnancy (New Combe, 1981).

A short interval between deliveries results in a poor outcome partly because very short gestations are over represented. If more correctly, interval between pregnancies is studied, a short interval often results from reproductive compensation to replace a lost child as soon as possible and the extra risk results from the tendency of adverse outcome to recur (New Combe, 1981).

Maternal factors:

Maternal complications observed during pregnancy may influence birth measures significantly.

Infections:

Severe infections including urinary tract infections, presumed viral infections, vaginitis,

endometritis, etc, were associated with reduced chest, arm, and thigh circumference, also arm and thigh skin folds and muscle . There was a negative effect on birth weight but it was not significant.

Pre-eclampsia and Toxemia of pregnancy were associated with significant reductions in birth weight, headcircumference, but the negative effect on length and placental weight was not significant (Pitkin, 1981).

Hyperemesis gravidarum Nausea and, vomiting during the first trimester usually do not interfere with nutrition. However hyperemesis can result in severe physiologic disturbances, such as dehydration, electrolyte imbalance ketoacidosis, nutritional depletion and hypovitaminosis (Pitkin, 1981).

A strong factor in relation to birth weight is the weight of the preceding child. This is a part of the general phenomenon of the reproductive character of pregnancy outcome (Vandenberg, 1981).

An early report on maternal nutrition stated that though dietary habits during pregnancy are