STUDY OF SERUM CARNITINE LEVEL IN INFANTS WITH PROTEIN ENERGY MALNUTRITION

THESIS

Submitted in partial fulfillment of
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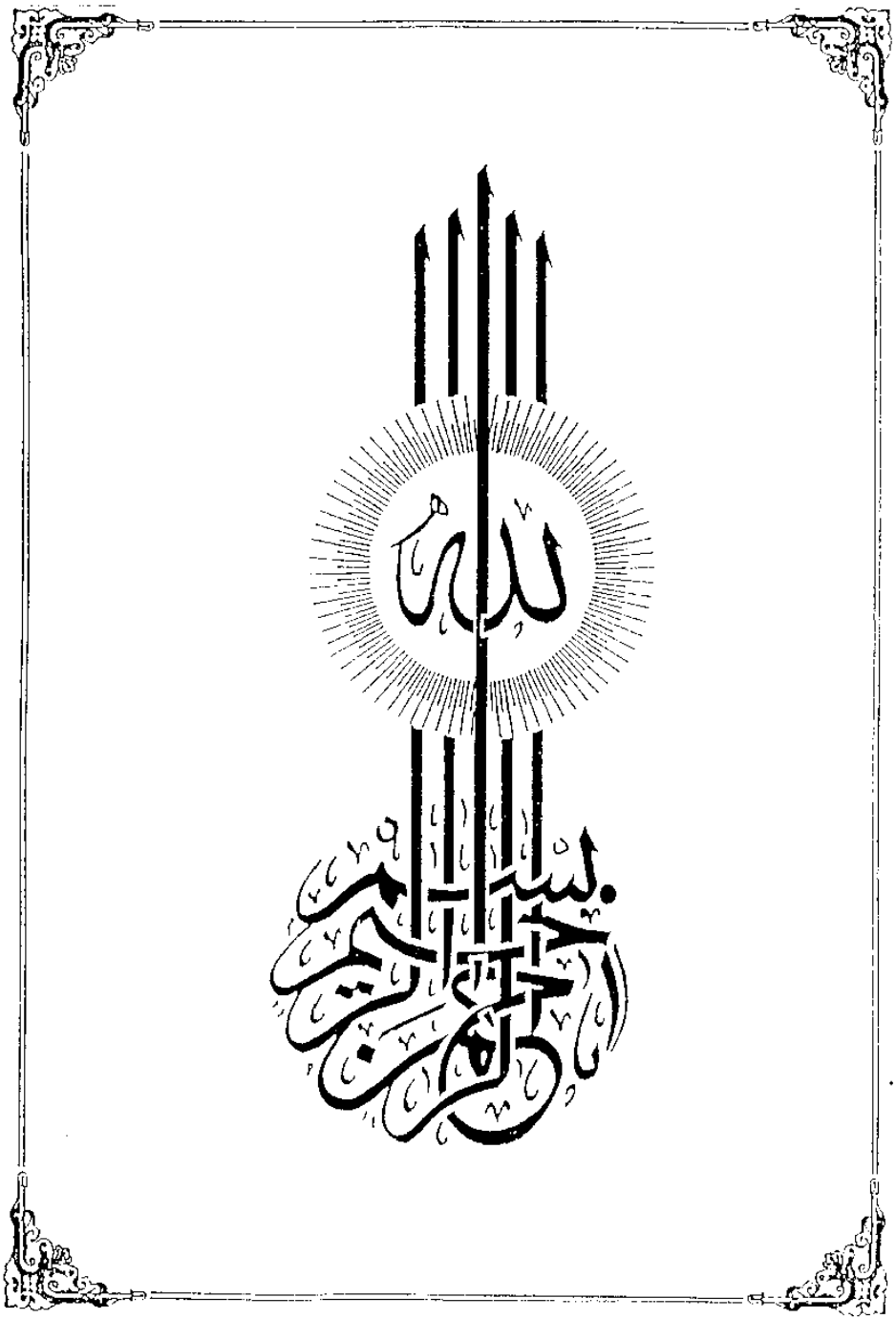
"بسم الله الرحمن الرحيم"

قالوا سبحانك لا علم لنا
إلا ما علمتنا إنك أنت العليم الحكيم "

"صدق الله العظيم"
سورة البقرة/ اية ٣٢



To
My Family

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The Candidate

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LIST OF ABBREVIATIONS

CoA	: Coenzyme A
PEM	: Protein-energy malnutrition
Kwo.	: Kwashiorkor
m.Kwo.	: Marasmic kwashiorkor
IgA	: Immunoglobuline A
S.carnitine	: Serum carnitine
pl.albumin	: Plasma albumin
s.FFA	: Serum free fatty acids
pl.glucose	: Plasma glucose
Lab	: Laboratory
Fig.	: Figure

INTRODUCTION

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L-carnitine was discovered in meat extracts eighty years ago *(Gulewitsch and Kremberg, 1905),* but the role for carnitine in metabolism was established fifty years later *(Fritz, 1959).* It was found that carnitine caused a marked stimulation of long-chain fatty acids oxidation in mitochondria. Carnitine is a necessary factor in the transport of acyl residues across the inner mitochondrial membrane *(Bremer, 1983).*

L-carnitine is synthesized endogenously from methylated lysyl residues *(Winter et al., 1987).* Meat products, particularly red meats, and dairy products are important dietary sources of L-carnitine *(Rebouche and Engel, 1983).*

Carnitine levels are regulated by endogenous biosynthesis from lysine and methionine, intestinal absorption, renal excretion, and catabolism. Also, the amount of dietary carnitine contribute to the final levels of carnitine in body fluids and tissue *(Duran et al., 1990).*

Infants with protein-energy malnutrition have deficiency in the essential amino acids as lysine and methionine as a part of their syndrome *(El-Mougi, 1990).* Also, these infants with

protein-energy malnutrition consume little amounts of red meat and dairy products, which are the richest sources of dietary carnitine.

So, carnitine deficiency can be anticipated in those infants. This deficiency may contribute to the metabolic disturbances they have.

AIM OF THE WORK

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The aim of this work is to study the serum carnitine level in infants with protein-energy malnutrition and its correlation with plasma albumin, serum free fatty acids, and plasma glucose levels.

REVIEW OF LITERATURE