Serum Ferritin and iron metabolism in malnourished children

THESIS

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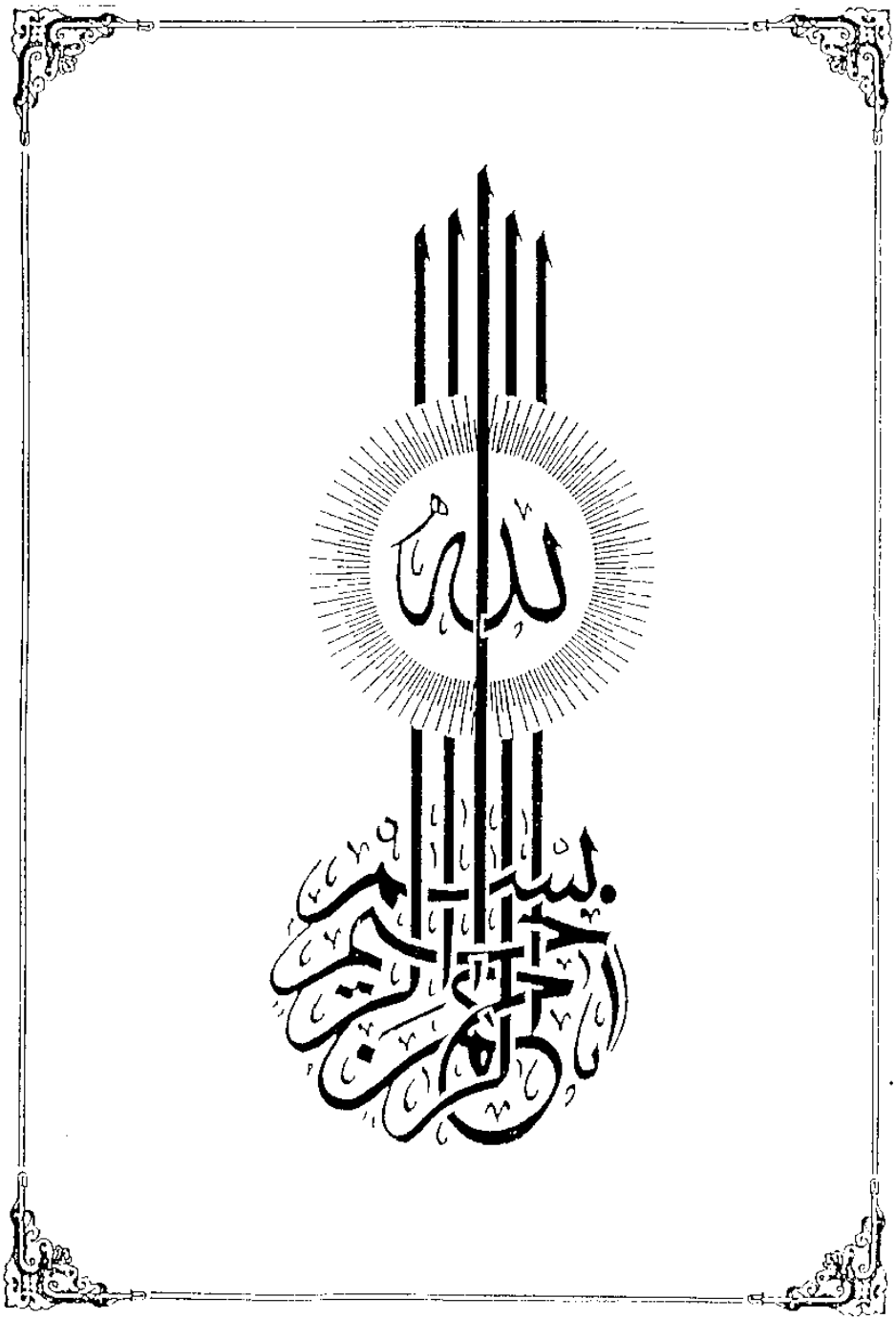
بسم الله الرحمن الرحيم

﴿ وَقُل رَّبِّ زِدْنِي عِلْمًا ﴾

صدق الله العظيم



To my Parents , my Wife
&
my Son

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List of Abbreviations

Hb	**Hemoglobin**
Hct	**Hematocrit**
KWO	**Kwashiorkor**
MCH	**Mean Corpuscular Hemoglobin**
MCHC	**Mean Corpuscular Hemoglobin Concentration**
MCV	**Mean Corpuscular Volume**
PEM	**Protein Energy Malnutrition**
RBCs	**Red Blood Cells**
TIBC	**Total Iron Binding Capacity**
TLC	**Total Leucocytic Count**

Introduction

INTRODUCTION

World wide , malnutrition is one of the leading causes of morbidity and mortality in childhood. Mal - nutrition may be due to improper or inadequate food intake or may result from inadequate absorption of food (***Barness, 1992***).

Anaemia is one of the manifestation of mal - nutrition ; Any type of anaemia may be presented , including iron deficiency, megaloblastic and normocytic normochromic anaemia (***Vaughan et al., 1987***).

Ferritin is a water soluble form of stored iron. It constitutes 2/3 of the latter inside the body. Apart from reticuloendothelial cells , it is present in kidneys , brain , placenta , gut and serum (***Hershko, 1977***).

A low concentration of serum ferritin is characteristic only of iron deficiency (***Nathan and Oski , 1981***).

Any decrease in serum ferritin level may be interpretated as iron depletion but an increased level does not necessarily mean iron over load. Thus , the serum ferritin may be increased by shifts of iron from the erythrocyte to the stores , as would occur with anaemia not associated with blood loss , and by abnormalities in either hepatic or reticuloendothelial cell function (***Lipschitz et al., 1974***) .

Aim Of The Work

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Is to study iron metabolism in malnourished children especially focusing on serum ferritin.

Review Of Literature

MALNUTRITION

Introduction :

Under nutrition is the most common disease in the world to affect the physical development of the child. Preschool children appear to be the major risk group all over the world. Approximately, 300 million preschool children (60 % of the total preschool population of the world) suffer from some degree of moderate to severe protein energy malnutrition (***Kaplan, 1972***).

About 100 million children through the world are suffering from moderate or severe protein energy malnutrition at any one time (***McLaren, 1976***). Nutritional deficiency may be primary in origin resulting from inadequate intake of nutrients or secondary from pathological conditions of the host which include demands greater than normal requirements or the interference with proper absorption or the utilization of ingested nutrients (***Jelliffe, 1978***). Among the important ecological factors that aggravates malnutrition in Egypt is the economic situation and the problem of over population (***Mina, 1973***).