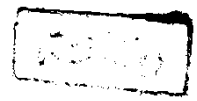
BIOPHYSICAL STRUCTURE OF HAEMOGLOBIN IN ACUTE CHILDHOOD LEUKEMIA

Thesis
Submitted for partial fulfilment
of Master Degree in Pediatrics



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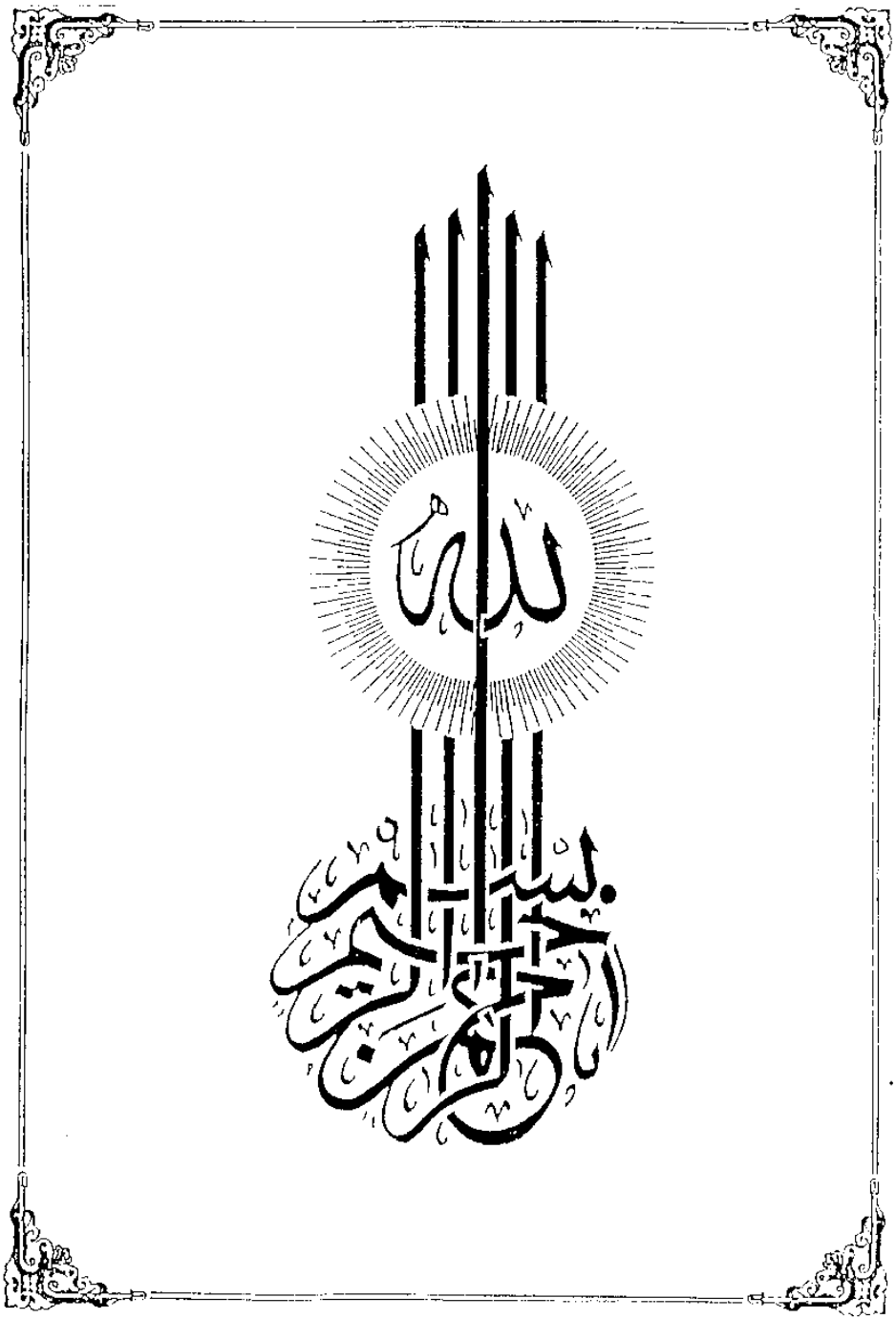

Dedicated to

My Dear Mother and Father

List of Abbreviations

ALL	:	Acute Lymphoblastic Leukemia.
AML	:	Acute Myeloid Leukemia.
ANLL	:	Acute Non Lymphoblastic Leukemia.
B.C.	:	Buffer Capacity.
B.M.	:	Bone Marrow.
CALLA	:	Common Acute Lymphoblastic Leukemia Antigen.
C.N.S.	:	Central Nervous System.
Co-Hb	:	Carboxyhemoglobin.
Cy Ig	:	Cytoplasmic Immunoglobulin.
E.R.	:	E - Rosette Test.
FAB	:	French - American - British Cooperative Working Group.
Hb	:	Hemoglobin
$Hb-O_2$	:	Oxyhemoglobin.
HTLV	:	Human T-cell Leukemia Virus.
Ig	:	Immunoglobulin.
Met-Hb	:	Methemoglobin.
PAS	:	Periodic Acid Schiff.
PH`	:	Philadelphia Chromosome.
RBCs	:	Red Blood Cells.
S-Hb	:	Sulfhemoglobin.
Sm Ig	:	Surface Membrane Immunoglobulin.
T.d.T.	:	Terminal Deoxynucleotidyl Transferase.
T.L.C.	:	Total Leukocytic Count.
WBCs	:	White Blood Cells.

C O N T E N T S

L I S T O F T A B L E S

Tables of the Review of Literature

Tables of the Results

L I S T O F F I G U R E S

Figures of The Review of Literature

Figure of Material and Methods

Figures of the Results

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INTRODUCTION AND AIM OF THE WORK

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Acute leukemia is the most common childhood malignancy. It constitutes 58.5% of all malignancies attending the Hematology/Oncology Clinic, Children's Hospital, Ain Shams University.

It forms 31.12 per 100,000 outpatient, visiting the General Pediatric Clinic in the same hospital (Khalifa et al., 1988).

Many efforts had been tried to classify leukemia according to morphological, cytochemical, cyto and molecular genetic and biochemical criteria to tailor the necessary treatment for each particular patient and to give a more or less clear and definite prognosis.

Bone marrow examination might be blast free, with a load of 10×10^{10} of blasts.

Many trials were performed to detect markers wether chemical or biological to confirm remission and relapse. Molecular biology is one of these techniques.

The aim of the present work is to investigate spectrophotometric structure of hemoglobin in patients with acute leukemia wether acute lymphoblastic (ALL) or acute non lymphoblastic (ANLL) and the changes that might occur in remission and relapse.

This is a trial to add a biophysical parameter that might help as a marker for follow up and treatment for these patients.

REVIEW OF LITERATURE