PULMONARY FUNCTION TESTS IN ASTHMATIC EGYPTIAN CHILDREN BEFORE AND AFTER KETOTIFEN (ZADITEN) AND/OR SODIUM CROMOGLYCATE (INTAL) THERAPY

Thesis

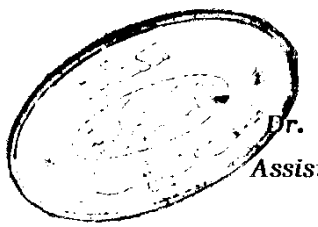
Submitted for Partial Fulfilment of

the M.Sc. Degree in Pediatrics

By

Souheil Saad-Eddine Zeenni

[M.B., B.Ch.]

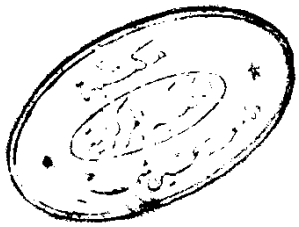


SUPERVISED BY

Dr. KARIMA ABD-EL KHALIK

Assistant Professor of Pediatrics

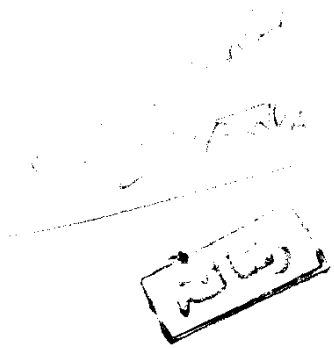
Ain-Shams University

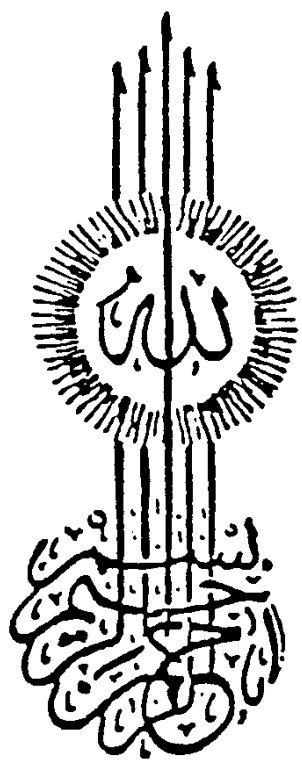


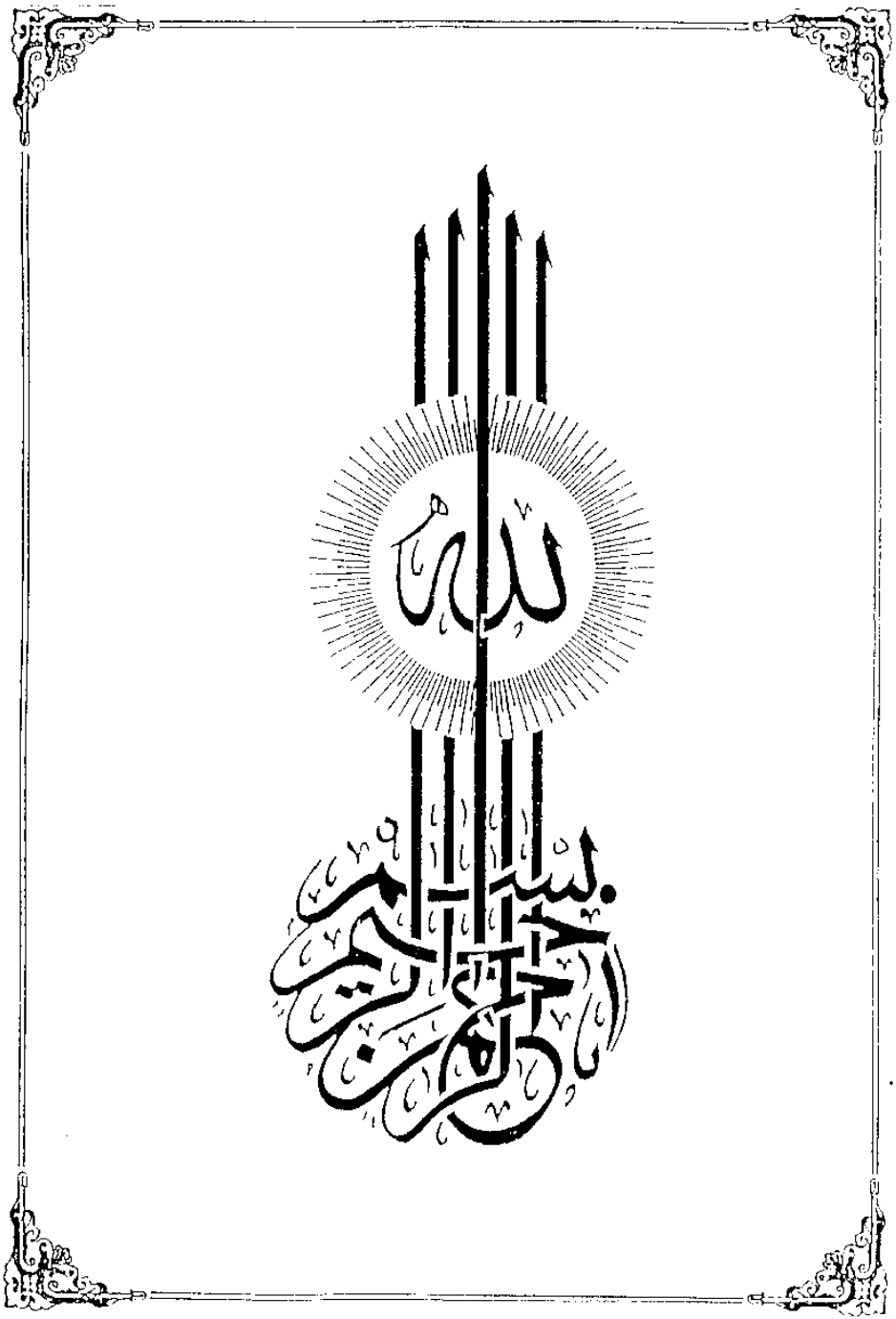
Faculty of Medicine

Ain-Shams University

1 9 8 7







To the Soul of

my Father

ACKNOWLEDGEMENT

I would like to express my deepest gratitude and utmost respect to the eminent Professor Dr. Karima Abd-EL Khalik for her kind guidance, constant supervision, meticulous revision and valuable advise. She guided me during the practical work and helped me in every possible way to make the completion of this work a reality. Her spirit is reflected every where in the thesis.

I would like to express my appreciation to professor Dr. Abd-El Khalik Khattab, Professor of pedriatic, who gave me the honour to work in his magnificent unit. Words will not be enough to express my gratitude, but I will always be indebted to him, for without his effort this work would have not been accomplished.

Finally, I want to thank all my colleagues who participated in this work in oneway or another. I am most grateful to them.

ABBREVIATIONS

ATP : Adenosine Triphosphate

A.T.S.: American Thoracic Society.

CAMP : Cyclic Adenosine Monophosphate

CGMP : Cyclic Guanosine Mono Phosphate

COMT : Catechol - oxy - methyl transferase

ECF-A : Eosinophil Chemotactic Factor of anaphylaxis

FEV_1 : Forced Expiratory volume in one second.

FVC : Forced Vital Capacity

GTP : Guanosine Triphosphate

IgE : Immunoglobulin E.

IgG : Immunoglobulin G.

IgGs-TS: Short term sensitizing immunoglobulin.

LTC : Leukotrienes C.

LTD : Leukotrienes D.

LTE : Leukotrienes E.

measr : measured.

ml : milli liter.

NCF : Neutrophil Chemotactic Factor

PAF : Platelet activating Factor

PCA : Passive Cutanuous anaphylaxis

$P.Co_2$: Partial pressure of carbon dioxide

PEFR : Peak exiratory flow rate

PGE_1 : Prostaglandin E_1

PGE_2 : Prostaglandin E_2

PGF_2 : Prostaglandin F_2

$P.o_2$: Partial Pressure of oxygen

Pred. : Predicted

P.V : Para - influenza Virus

R.S.V. : Respiratory Syncytial Virus

RV : Residual Volume

SC : Subcutaneous

SRS-A : Slow reacting substance of anaphylaxis.

TLC : Total Lung Capacity

t : Student "t" paird test .

TxA_2 : Thromboxane A_2

VC : Vital Capacity

CONTENTS

INTRODUCTION

INTRODUCTION

Bronchial asthma is defined as reversible airway limitation with multiple etiological factors . It varies in clinical severity from its mildest form in which individuals may experience occasional bouts of wheezing , separated by long periods in which lung function is normal , to its most severe form in which patients are chronically incapacitated despite maximal therapy (Seale , 1986) .

It is characterized by air-flow obstruction due to bronchospasm, mucosal edema and excessive secretion causing mucus plugging resulting in ventilation-perfusion imbalance, and hypoxemia (Stempel and Mellon , 1984).

Different methods of investigations are available but pulmonary function tests can provide important diagnostic and prognostic information in the management of children with asthma . The pulmonary functions which are commonly affected in bronchial asthma :

Total lung capacity (T.L.C) is increased .

Functional residual capacity (F.R.C) is increased.

vital capacity (V.C) is usually decreased .

Forced vital capacity (F.V.C) is decreased .

Forced expiratory volume in one second (F.E.V_1) is decreased .

Maximum expiratory flow between 25%- 75 % (M.E.F 25% -75%) may be decreased . (Crofton and Douglas , 1981)

The vitalograph spirometer is a compulerized apparatus which is not used in children less than six years of age .

However, it is quite easy to use and given fast and accurate records of static and dynamic lung volumes (VC% , FVC% , FEV % and FEV_1 /FVC % . (Phelan etal., 1982).

AIM OF THE WORK

AIM OF THE WORK

The aim of this work is to evalute the pulmonary function tests using the vitalograph spirometer , in asthmatic Egyptian children before and after giving ketotifen (Zaditen) and/or Sodium Cromoglycate (Intal).

REVIEW OF THE LITERATURE

REVIEW OF LITERATURE

Bronchial Asthma

Pag.