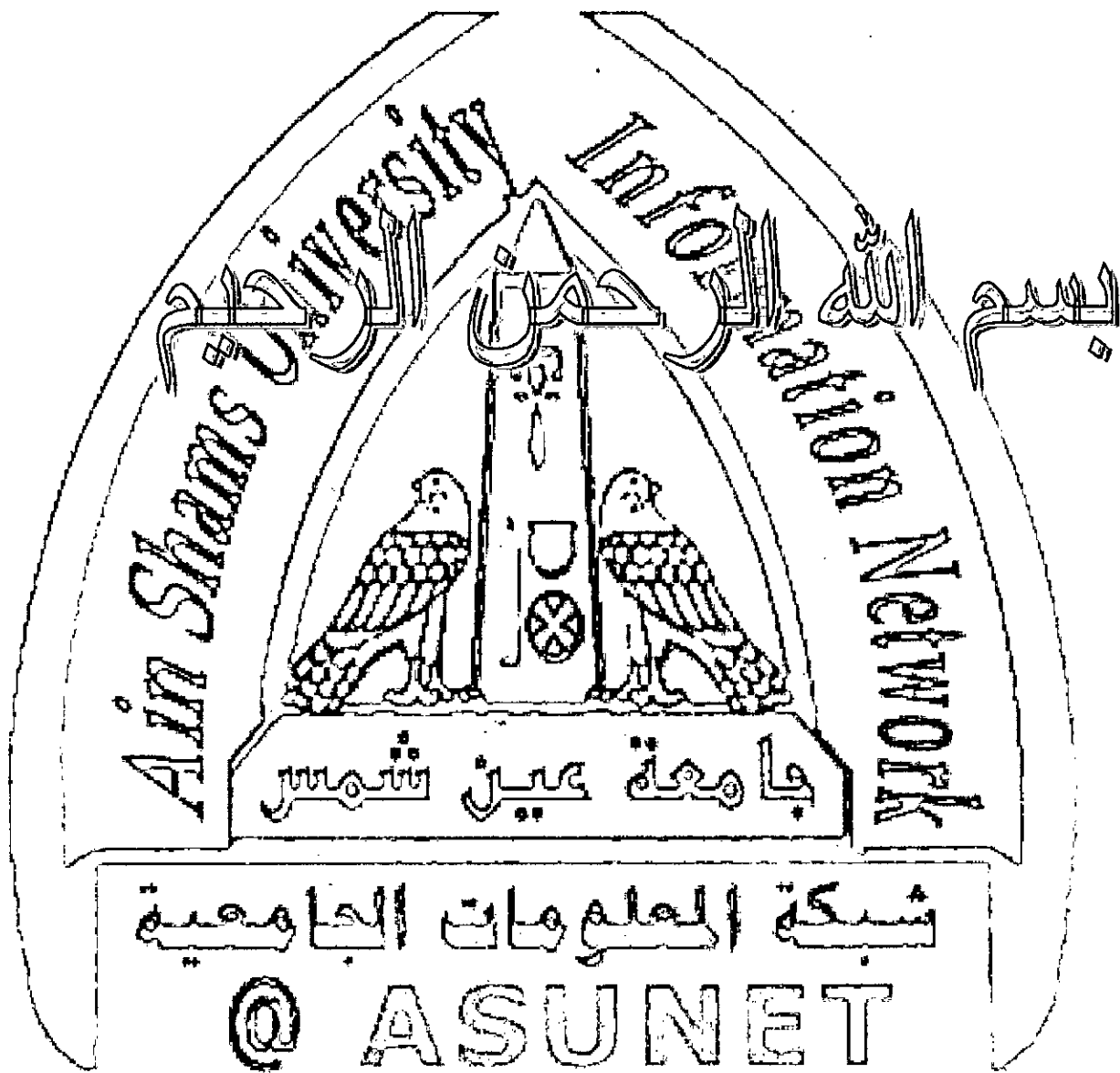




شبكة المعلومات الجامعية





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

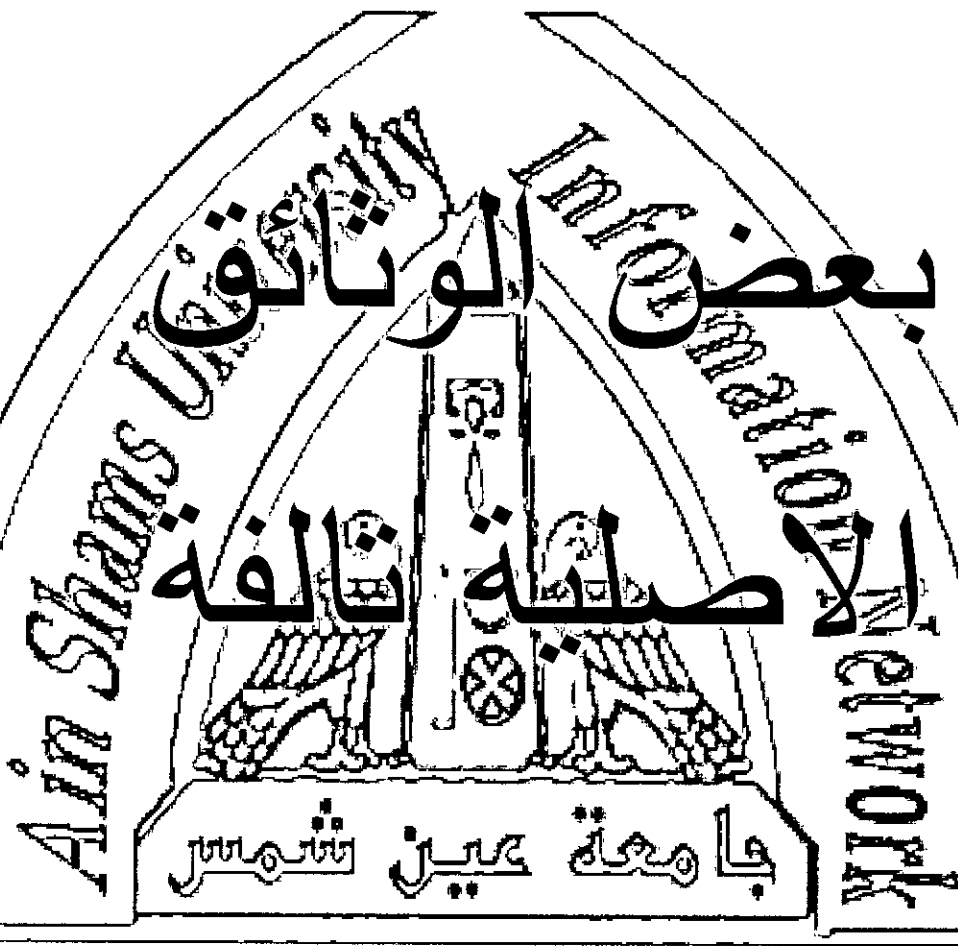


يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of
15-25- c and relative humidity 20-40%



شبكة المعلومات الجامعية
@ ASUNET

بالرسالة صفحات لم

بالأحلى



شبكة المعلومات الجامعية
@ ASUNET

Evaluation Of Emphysema In Patients With Bronchial Asthma Using High Resolution Computed Tomography And Pulmonary Function Tests

Thesis

Submitted for partial fulfillment of master degree
in chest diseases and tuberculosis

Demonstrator Of Chest

By

Gehan Farouk Ahmed El-Mehy

M.B.B.Ch

Supervised by

PROF. ABD EL-SADEK HAMED EL-AARAG

Prof. Of Chest Diseases And Tuberculosis
Benha Faculty Of Medicine
Zagazig University

DR. ATEF EL-SAYED EL-HOSSAINY EL-ABD

Ass. Prof. Of Chest Diseases And Tuberculosis
Benha Faculty Of Medicine
Zagazig University

DR. OSAMA TAHA GALAL

Prof. Of Chest Diseases And Tuberculosis
Benha Faculty Of Medicine
Zagazig University

**BENHA FACULTY OF MEDICINE
ZAGAZIG UNIVERSITY**

2005

84294

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا

عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ﴾

صَدَقَ اللَّهُ الْعَظِيمُ

سورة البقرة (الآية ٣٢)

Acknowledgment

First and for most thanks to ALLAH, the most merciful the most Gracious.

*Words can never express my deepest gratitude and appreciation to. **PROF. ABDEL-SADEK HAMED EL-AARAG** professor of Chest Diseases and Tuberculosis, Benha Faculty Of Medicine, Zagazig University, for his continuous and generous supervision, keen interest, expert guidance and precious time he offered me throughout this work.*

*I would like to express my deep appreciation and gratitude to **DR. ATEP EL-SAYED EL-HOSSAINY EL-ABD** Assistant professor of Chest Diseases and Tuberculosis, Benha Faculty Of Medicine, Zagazig university, for his continuous encouragement, his great experience had added much to my knowledge through adding valuable suggestions and remarks.*

*I would like to express my deep appreciation and gratitude to **DR. OSAMA TAHA GALAL**, Lecturer Of Radiodiagnosis, Benha Faculty Of Medicine, Zagazig University, for his close supervision, generous support, active participation and valuable advice.*

*I would like to express my deep appreciation and gratitude to **DR. WAHEED MOHAMMED SAIED**, Lecturer Of Chest Disease and Tuberculosis, Benha Faculty Of Medicine, Zagazig University, for his active participation and valuable advice in this work.*

Many thanks to my colleagues, patients my family and for any one participated in the success of this work.

CONTENTS

ITEMS	PAGE
INTRODUCTION.....	1
AIM OF THE WORK	2
REVIEW OF LITERATURE	
BRONCHIAL ASTHMA	
Definition	3
Etiologic classification of asthma	4
Pathology of bronchial asthma	5
Pathogenesis of bronchial asthma	16
Diagnosis of bronchial asthma	37
Classification of bronchial asthma according to its severity.....	40
Lung functions in asthma.....	42
EMPHYSEMA	
Definition and Aetiology of emphysema	45
Anatomic subtypes of emphysema	48
Pathology of emphysema	53
Diagnosis of emphysema	54
HIGH RESOLUTION COMPUTED TOMOGRAPHY	57
HRCT chest	59
Scan protocols	60
Diagnosis of emphysema using HRCT	61
SUBJECTS AND METHODS.....	67
RESULTS.....	76
DISCUSSION.....	93
CASES PRESENTATION	106
SUMMARY.....	112
CONCLUSION	115
RECOMMENDATIONS	116
REFERENCES	117
APPENDIX	148
ARABIC SUMMARY.....	1

LIST OF ABBREVIATIONS

Abbreviation	The Full Term
ADP	Adenosine di-phosphate
APC _s	Antigen presenting cells
BAL	Broncho Alveolar lavage
CAMP	Cyclic adenosine mono phosphate
CD	Complementary determining
CDR	Complementary –determining region
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
DC _s	Denderitic cells
DILD	Diffuse interstitial lung disease
DLCO	Diffusion capacity for lung by carbon monoxide
ECP	Eosinophil cationic protein
ENANC	Excitatory non adrenergic non cholinergic nerves
EPO	Eosinophil perioxidase
EP _X /EDN	Eosinophil protein X or Eosinophil derived neurotoxin
ES	Emphysema score
FEV ₁	Forced expiratory volume in first second
FRC	Functional residual capacity
FVC	Forced vital capacity
GINA	Global initiative for asthma
GM-CSF	Granulocyte – macrophage colony stimulating factor
HR	Histamine Receptor

Abbreviation	The Full Term
5HETE	5-hydroxyeicosa-tetra-enoic acid
HEV	High endothelial venule
HIV	Human immunodeficiency virus
HLAII	Human leucocytic antigen class II
HPLC	High performance liquid chromatography.
HRCT	High resolution computed tomography
HRF _s	Histamine releasing factors
HRIF _s	Histamine releasing inhibiting factors
HU	Hounsfield unit
HUVEC	Human umbilical vein endothelial cells
ICAM	Intracellular adhesion molecule
IFN- δ	Interferon-gamma
IgA	Immunoglobulin-A
IgE	Immunoglobulin E
IL	Interleukin
IL-1 α	Interleukin-1 receptor antagonist
INANC	Inhibitory non adrenergic non cholinergic nerves
KCO	Diffusion coefficient factor.
LAA	Low attenuation area
LTB ₄	Leukotrien B ₄
LTC ₄	Leukotrien C ₄
LTD ₄	Leukotriens D ₄
LTE ₄	Leukotrien E ₄
MR	Muscarinic Receptor

Abbreviation	The Full Term
MBP	Major basic protein
MDMS	Macrophage derived mucus secretagogue
MHC	Major histocompatibility complex
MIP	Macrophage inflammatory protein
MIP-1 α	Macrophage inflammatory protein one alpha
MIP-1 β	Macrophage inflammatory protein one beta
mRNA	Messenger ribonucleic acid
MVV	Maximum voluntary ventilation
NANC	Non adrenergic non cholinergic nerves
PEF	Peak expiratory flow
PFT _s	Pulmonary function tests
PGD ₂	Prostaglandin D ₂
PGE ₂	Prostaglandin E ₂
PGF ₂	Prostaglandin F ₂
PGF _{2α}	Prostaglandin F ₂ alpha
Pi	Protease inhibitor.
RNI	Reactive nitrogen intermediate
ROI	Reactive oxygen intermediate
RV	Residual volume
SB	Single breath
SCF	Stem cell factor
SD	Standard deviation
SI	Smoking index
TCA-3	T cell activator type 3

Abbreviation	The Full Term
TGF _s	Transforming growth factors
Th-2cells	T-helper 2 cells
TLC	Total lung capacity
TLCO	Transfer factor of lung by carbon monoxide
TNF	Tumor necrosis factor
TNF- α	Tumour necrosis factor alpha
TPr1	Thromboxane prostanoid receptor type 1
T _X A ₂	Thromboxane A ₂
T _X B ₂	Thromboxane B ₂
VC	Vital capacity
VCAM	Vascular cell adhesion molecule
α_1 AT	Alpha ₁ anti-trypsin
α_1 -Pi	Alpha ₁ protease inhibitor

LIST OF TABLES

Table No.	TITLE	Page
Table Of Review		
(1)	Classification of asthma severity	41
Table Of Results		
(1)	Patients characteristics.....	76
(2)	Characteristics of patients with and without emphysema	78
(3)	Statistical correlation between emphysema score and patients demographic data (age/ years ,SI cigarette/day and sex) in all patients.....	80
(4)	Statistical comparison between group I (patients with emphysema) and group II (patients without emphysema) as regarding age/years, sex, disease duration/years and smoking index	81
(5)	Statistical comparison between group I (patients with emphysema) and group II (patients without emphysema) as regarding ventilatory pulmonary function tests (FVC% predicted, FEV1% predicted, EV1/FVC, PEF% predicted and change of FEV1% predicted post bronchodilator).....	83
(6)	Statistical correlation between emphysema score and ventilatory pulmonary function tests (FVC % predicted, FEV1% predicted, FEV1/FVC, PEF% predicted and change of FEV1% predicted post bronchodilator) in all patients.....	85

Table No.	TITLE	Page
(7)	Statistical comparison between group I (patients with emphysema) and group II (patients without emphysema) as regarding lung volumes (RV% predicted, TLC % predicted and RV/ TLC %).....	86
(8)	Statistical correlation between emphysema score and lung volumes (RV% predicted, TLC % predicted and RV/ TLC%in all patients	87
(9)	Statistical comparison between group I (patients with emphysema) and group II (patients without emphysema) as regarding diffusion study (DLCO% of predicted and KCO % of predicted) and emphysema score (ES) between radiologist and pulmonologist in group I	88
(10)	Statistical correlation between emphysema score and diffusion study (DLCO% predicted and KCO% predicted) and disease duration/ years in all patients.....	90