## **CONTENTS**

	Page
> Contents —	i
> List of Tables —	ii
> List of Figures —	iii
> List of Abbrevations	iv
INTRODUCTION AND AIM OF THE WORK———	1-2
REVIEW OF LITERATURE	
Chronic obstructive pulmonary disease	3
Epidemiology of COPD	
Etiology and risk factors	
Pathology and Pathogenesis of COPD	
Pathophysiology of COPD————————————————————————————————————	
Osteoporosis and COPD	
Diagnosis of COPD	42
SUBJECTS AND METHODS	51
RESULTS-	56
DISCUSSION	69
SUMMARY & CONCLUSIONS	<del>76</del>
REFERENCES	<del>7</del> 9
ARABIC SUMMARY	

-i

## LIST OF TABLES

Table No. Page	Results	
Table (1):	Characteristic of subjects	-56
Table (2):	clinical and radiological data among COPD groups	-58
Table (3):	Comparison between moderate COPD group and control group as regards ventilatory function tests(spirometry).	<b>–</b> 59
Table (4):	Comparison between severe COPD group and control group as regards ventilatory function tests(spirometry).	-60
Table (5):	Comparison between very severe COPD group and control group as regards ventilatory function tests (spirometry).	<del></del> 61
Table (6):	Comparison between total COPD group and control group as regards ventilatory function tests (spirometry).	-62
Table (7):	Comparison between COPD groups and control group as regards number and percentage of normal,osteopenia and osteoporosis—	-63
Table (8):	Comparison between Tscore of COPD patients and control group—	-65
Table (9):	Linear regression analysis using least square method between forced expiratory volume in the first second (% predicted) and T score	67
F.11 (10)		07
Table (10)	: Spearman's rho rank correlations between T score and pulmonary function tests in COPD group—	-68

## LIST OF FIGURES

Figure N	No.	Review of literature	
Figure (	(1): Protease- anti-protease imbalance in	COPD.——2	20
Figure N	No	Results	
Figure (	(2): Comparison between COPD group and the age	0 1	57
Figure (	(3): Comparison between COPD group and BMI—	0 1 0	57
Figure (	(4): Comparison between COPD subgroups regards number and percentage of nor osteoporosis	rmal, osteopenia and	54
Figure (	(5): Comparison between T score of COPD group—	1	65
Figure (	(6): Correlation between FEV1% and T scoosteoporosis	•	66

## LIST OF ABBREVATIONS

Symbol Abbreviation

**AAT** Alpha-1 antitrypsin

ATS American thoracic society
BAL Bronchoalveolar lavage
BMD Bone mineral density
BMI Body mass index

BTS British thoracic society
CD Cluster of differentiation

**COPD** Chronic obstructive pulmonary disease

**CT** Computed tomography

CTGF Collagen tissue growth factor
CXCR CXC chemokine receptors
DALYS Disability-Adjusted LifeYears
DEXA Dual energy X-ray absorptiometry

**ECG** Electrocardiography

EGFR Epidermal growth factor receptor ERS European respiratory society ETS Environmental tobacco smoke

**FEF** Forced expiratory flow

**FEV1** Forced expiratory volume in first second

**FFM** Fat-free mass

**fig** Figure **FM** Fat mass

**FVC** Forced vital capacity

**GOLD** Global initiative for chronic obstructive lung disease

**GRO** Growth related onchogen

**HIV** Human immunodeficiency virus

**HRCT** High resolution computed tomography

**HS** Highly significant

**IGF-1** Insulin like growth factor-1

**IGFBP** Insulin like growth factor binding protein

IL Interleukine

JVP Jagular venous pressure

Kg Kilogramm KPa Kilo Pascal LT Leukotrien

**MDI** Metered dose inhaler

**mEPHX** Microsomal Epoxide Hydrolase

Mg Milligram
ml Milliliter
mm Millimeter

mm Hg Millimeter mercury

MMP	Matrix metalloproteinase
mRNA	Messenger ribonucleic acid

**NHANES** National health and nutrition examination survey

NO Nitric oxide no Number

NS Non-significant

O2 Oxygen

PaCO2 Partial arterial carbon dioxide pressure

Pao2 Partial arterial oxygen pressure
PEFR Peak expiratory flow rate

**PICP** Procollagen type I carboxyl terminal propeptide

**ROS** Reactive oxygen species

S Significant

SDs Standard deviations
SVC Slow vital capacity

**SLPI** Secretory leukoproteinase inhibitor

tab table

**TCTP** Type I collagen carboxyl terminal telopeptide

TGF Transforming growth factor
TNF Tumor necrosis factor
UK United Kingdom

VA/Q Ventilation –Perfusion ratio WHO World health organisation

Yrs Years