

**Assessment of the lung function using impulse
oscillometry before and after bronchoscopic lung
volume reduction**

Thesis

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List of Abbreviations

ABG	Arterial Blood Gases
AE	Acute Exacerbation
AUR	Acute Urinary Retention
AX	Reactance Area
Bio-BLVR	Biological Bronchoscopic Lung Volume Reduction
CBC	Complete Blood Picture
cAMP	Cyclic Adenosine Monophosphate
Ca	Capacitance
CAO	Chronic Airflow Obstruction
COPD	Chronic Obstructive Pulmonary Disease
CT	Computed Tomography
CV	coefficient of variation
CXR	Chest X-ray
DLCO	Diffusing capacity of the lungs for carbon monoxide
DNA	deoxy ribonucleic acid
EBVs	Endobronchial valves
ECG	Electrocardiogram
ECHRS	European Community Health and Respiratory Survey
FEV1	Forced Expiratory Volume in One Second
FEV6	forced expiratory maneuver to Six-second duration
FiO2	fraction of inspired oxygen

List of Abbreviations (Cont.)

F.O.B.	Fibrooptic bronchoscope
FOT	FORCED OSCILLATION TECHNIQUE
Fres	Frequencies
FVC	Forced Vital Capacity
GOLD	Global Initiative for Chronic Obstructive Lung Diseases
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HCO₃	Bicarbonate
HRCT	High Resolution Computerized Tomography
Hz	Hertz
IAC	Inhaled Anticholinergic
ILD	Interstitial lung disease
INH	Inhalation
IOS	Impulse Oscillometry
LA	Left atrial diameter
KPa	Kilopascal
LVRC	Lung Volume Reduction Coin
LVRs	Lung Volume Reduction Surgery
MEFV	maximum expiratory flow-volume
Mg	Milligram
MHz	Mega Hertz
MIFV	maximum inspiratory flow-volume
Min	Minute

List of Abbreviations (Cont.)

MMEF	Maximum mean expiratory flow
MRC	Medical Research Council
MWD	Minute Walk Distance
mmHg	Millimeter mercury
NOTT	Nocturnal Oxygen Therapy Trial
NSAID	Nonsteroidal Anti-Inflammatory Drug
PaO₂	Oxygen Tension
PaCO₂	Carbon Dioxide Tension
PFT	Pulmonary Function Test
PH	The acidity or alkalinity of blood
PRN	pseudorandom noise
PSTF	Preventive Services Task Force
R₅	Resistance at 5 Hz
R₂₀	Resistance at 20 Hz
R_{rs}	Resistance
RV	Residual Volume
SaO₂	Oxygen Saturation
Sec	Second
SD	Standard deviation
SGOT	Serum glutamate-oxalacetate Transaminase
SGPT	Serum glutamate- pyruvate Transaminase
TLC	Total Lung Capacity

List of Abbreviations (Cont.)

TORCH	The Towards a Revolution in COPD Health
USA	United States of America
X5	Reactance
Xrs	Reactance
WBC	White blood cells
WHO	World Health Organization
6-MWD	6-Minute-walk distance
6-MWT	6-Minute-walk test

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Introduction

Chronic Obstructive Pulmonary Disease (COPD), a common preventable and treatable disease, is characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. Exacerbations and comorbidities contribute to the overall severity in individual patients(1).

COPD is the 4th leading cause of death worldwide, yet 75% of those affected remain untreated this can be changed! The World Health Organisation estimates 600 million people worldwide have COPD. COPD is projected to be the third leading cause of death by 2020 with only heart disease and cerebrovascular disease accounting for more deaths. Lung cancer, stomach cancer and HIV will be the 5th, 8th and 9th most common causes of death respectively. Higher prevalence rates for COPD are found in men than in women globally reflecting historic gender differences in smoking behaviour. Prevalence figures for COPD are believed to be underestimated. Sufferers tend not to seek medical advice until the disease has progressed and the condition is severe (2).