Spirometric Assessment before and after Treatment of Prostatic Hyperplasia in Patients with Chronic Obstructive Pulmonary Disease

Thesis

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of Master Degree in **Chest Diseases**

By

Abdel Hamid Mohammed Shawky Hiekal
B.Ch, M.Sc

Under Supervision of

Prof. Aya Mohamed Mohamed Abdel Dayiem
Professor of Chest Diseases
Faculty of Medicine – Ain Shams University

Prof. Tarek Osman Elsayed
Professor of Urology
Faculty of Medicine – Ain Shams University

Assist. Prof. Hala Mohamed Salem
Assistant Professor of Chest Diseases
Faculty of Medicine – Ain Shams University

Faculty of Medicine
Ain Shams University
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Abdel Hamid Mohammed Shawky Hiekal

List of Contents

List of Tables

List of Tables cont...

List of Figures

List of Figures cont...

List of Abbreviations

Abb.	Full term
5 AR	*5 alpha reductase*
Ach	*Acetylchoine*
AMP	*Adenosine momophosphate*
ATS	*American Thoracic Society*
AUA	*American Urological association*
AUR	*Acute urinary retention*
BD	*Bladder detrusor*
BII	*BPH impact index*
BOO	*Bladder outlet obstruction*
BPE	*Benign prostatic enlargement*
BPH	*Benign prostatic hyperplasia*
cAMP	*Cyclic Adenosine momophosphate*
CAT	*COPD assessment test*
COPD	*Chronic obstructive pulmonary disease*
CRP	*C-reactive protien*
CYP	*Cytochrome p450*
DHT	*Dihydrotestosterone*
DRE	*Digital rectal examination*
ERS	*European Thoracic Society*
ERV	*Expiratory reserve volume*
FEF max	*Maximum instantaneous flow achieved*
FEF	*Forced expiratory flow*
FEV1	*Forced expiratory volume in first second*
FIF	*Forced inspiratory flow*
FRC	*Functional residual capacity*
FVC	*Forced vital capacity*
GnRH	*Gonadotropin releasing hormone*
GOLD	*Global initiative for chronic obstructive lung disease*

List of Abbreviations cont...

Abb.	Full term
IC	*Inspiratory capacity*
ICS	*Inhaled corticosteroids*
IL	*Interleukin*
IPSS	*International prostate symptomes score*
IQR	*Interquartile range*
IRV	*Inspiratory reserve volume*
LABA	*Long acting beta-2 agonist*
LAMA	*Long acting antimuscarinics*
LUTS	*Lower urinary tract symptomes*
MMEF/MEF	*Maximal (mid-) expiratory flow*
mMRC	*Modified British Medical Research council*
MVV	*Maximal voluntary ventilation*
OAB	*Overactive bladder*
PaO2	*Partial Pressure of arterial Oxygen*
PCV13	*Pneumococcal conjucate vaclcine*
PEF	*Peak expiratory flow*
PFTs	*Pulmonary function tests*
PI	*Phosphate inositol*
PPSV23	*Pneumococcalpolysaccharide vaclcine*
PSA	*Prostate surface antigen*
PVR	*Post void residual urine volume*
QoL	*Quality of life*
RCT	*Randomized controlled trial*
RV	*Residual volume*
SABA	*Short acting beta-2 agonist*
SAMA	*Short acting antimuscarinics*
SD	*Standard deviation*
SPI	*Symptomes problem Index*
SPSS	*Statistical package for social science*

List of Abbreviations cont...

Abb.	Full term
SRaW	*Specific resistance if airway*
TAUS	*Transabdominal ultrasound*
TLC	*Total lung capacity*
TRUS	*Transrectal ultrasound*
TUIP	*Transurethral incision of the prostate*
TUMT	*Transurethral microwave thermotherapy*
TUNA	*Transurethral needle ablation of the prostate*
TURP	*Transurethral resection of the prostate*
TUVP	*Transurethral vaporization of the prostate*
TV or Vt	*Tidal volume*
TVP	*Transurethral electrovaporization of the prostate*
Va	*Alveolar gas volume*
VC	*Vital capacity*
VIP	*Vasoactive intestinal peptide*
Vl	*Actual volume of the lung*

INTRODUCTION

Chronic obstructive pulmonary disease (COPD), predominantly prevalent in men, is a chronic inflammatory disorder of the airway and lungs. COPD is one of the most prevalent diseases and the third leading cause of death globally ***(World Health Organization, 2006).*** Patients with COPD usually present with progressive dyspnoea, shortness of breath and productive cough. Moreover, they frequently experience various comorbid conditions, such as cardiovascular disease, metabolic disorder, dementia and skeletal muscle dysfunction ***(Negewo et al., 2015; Liao et al., 2015),*** These comorbidities might have a significant effect on patient outcome ***(Smith et al., 2014)*** COPD is currently recognised as a chronic systemic inflammatory state because the inflammation involves the lung and may contribute to various extrapulmonary effects ***(Agusti et al., 2008; Fabbri et al., 2007).***

Benign prostatic hyperplasia (BPH) is a common medical condition in older male populations. Approximately 14% of men aged 40–49 years are estimated to have BPH, and the prevalence increases to >50% in men aged 60 years and over ***(Garraway et al., 1991; Thorpe, 2003)*** Patients with BPH usually present with lower urinary tract symptoms (LUTS), such as urinary urgency and retention, considerably affecting the quality of their lives. In addition to ageing, other reported predisposing factors for BPH are metabolic syndrome, obesity

and reduced physical activity ***(De Nunzio et al., 2012; Parsons et al., 2013; Sea et al., 2009).***

Although COPD and BPH are associated with chronic inflammation of the airway and prostate, respectively ***(Shaw et al., 2014; Bostanci et al., 2013)*** and are common disorders in ageing male populations, the relationship between these two conditions has rarely been explored. In addition, previous studies have suggested that COPD and BPH might share an underlying pathophysiology. For example, higher levels of interleukin (IL-6) and C reactive protein (CRP) in serum or sputum were observed in both patients with COPD and BPH. ***(Grubek-Jaworska et al., 2012; Karadag et al., 2008; Schenk et al., 2010)*** Moreover, while patients with COPD appear to be more physically inactive than their counterpart without COPD ***(Spruit et al., 2015)*** studies have suggested that level of physical activity was negatively associated with BPH risk. This implies that physical inactivity among patients with COPD might also be a contributing factor for BPH development ***(Parsons et al., 2008).***

Lower urinary tract symptoms (LUTS) in men with benign prostatic hyperplasia (BPH) comprises of storage symptoms (frequency, urgency, nocturia, and urinary incontinence) and voiding symptoms (weak stream, intermittency, hesitancy, straining and terminal dribbling) ***(Fitzpatrick et al., 2006; Abrams et al., 2002).*** The storage sub-classification category of LUTS is same as the overactive

bladder syndrome (OAB), which has been previously defined by the International Continence Society (ICS) as ‘urgency, with or without urge incontinence, usually with frequency and nocturia ***(Abrams et al., 2002).***

AIM OF THE WORK

The aim of study was to Assess the effect of medical treatment of symptomatic prostatic hyperplasia in pulmonary fuction tests of patients with chronic obstructive pulmonary disease, and spirometric variables before and after treatment.