



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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THE FEASIBILITY OF PREOPERATIVE 6-MINUTE WALK TEST FOR PREDICTING POSTOPERATIVE PULMONARY COMPLICATIONS OF THORACOTOMY

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ مَوْلَا

لَسْبَحَانَكَ لَا يَعْلَمُ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

صدق الله العظيم

سورة البقرة الآية: ٣٢

Dedication

I'd like to dedicate this work to my supervisors who gave me a great support, teaching and kind continuous encouragement.

Then I want to dedicate it to the soul of my father, my mother who supported me on my whole life with endless love, support, help and their continuous praying for me.

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Abbreviations

6MWD	Six-minute walk distance
6MWT	Six-minute walk test
ABG	Arterial blood gases
AT	Anerobic threshold
ATS	American thoracic society
COPD	Chronic obstructive pulmonary disease
CPET	Cardiopulmonary exercise testing
DLCO	Diffusion capacity for carbon monoxide
ECG	Electrocardiogram
FEV	Forced expiratory volume
FEV ₁	Forced expiratory volume in the first second
FRC	functional residual capacity
FVC	Forced vital capacity
ICU	Intensive care unit
MV	Mechanical ventilation
MVV	Maximal voluntary ventilation
PaCO ₂	Partial arterial carbon dioxide pressure
PaO ₂	Partial arterial oxygen pressure
POETTS	Perioperative exercise testing and training society
PPCS	Postoperative pulmonary complications
PPO	Predicted postoperative
RV	Residual volume
TLC	Total lung capacity
VC	Vital capacity

Vo _{2 max}	Maximal oxygen consumption
SD	standard deviation
Min	minimum
Max	maximum
DM	diabetes mellitus
TB	tuberculosis
IPF	idiopathic pulmonary fibrosis
%P	percentage of predicted
RR	respiratory rate
HR	heart rate
SPO ₂	peripheral oxygen saturation
N	number
S	significant
NS	non-significant
LOS	length of stay in hospital
SBP	systolic blood pressure
DBP	diastolic blood pressure
B. S	Borg scale (grade of dyspnea)
Δ RR	degree of change between pre & post-test value of RR
Δ HR	degree of change between pre and post-test value of HR
Δ SpO ₂	degree of change of pre and post- test values of SPO ₂ %
Δ Borg.	degree of change of grade of dyspnea pre and post-test

Abstract

Background:

Exercise testing is a reliable additional method to role pulmonary assessment prior to surgery of Thoracotomy patients. Supporting significant evidence is missing about routine and usual implementation of these simple tests in the field of preoperative evaluation.

Aim: To test the feasibility of preoperative six-minute walk test for predicting postoperative pulmonary complications of Thoracotomy.

METHODS: Between November 2018 and October 2019, 36 patients with an indication for thoracotomy underwent their surgery. Demographic data were collected, spirometry ,6MWT were performed 1 day before thoracotomy, Total walking distance, oxygen saturation decline, heart rate recovery, dyspnea grade, degree of BP change, postoperative length of stay in hospital were all evaluated, then detection and follow up of postoperative pulmonary complication was done.

RESULTS: out of 36 cases studied 21 were males and 15 females with a mean age of 42 years. All surgeries were done by just 2 surgeons. A 6MWD of 500 m and 100% of the predicted 6MWD were taken as threshold values to classify studied patients into (group A) whom walked $\leq 500\text{m}$. and who achieved $\leq 100\%$ of predicted 6MWD and (group B) whom walked $>500\text{m}$. and who achieved $>100\%$ of predicted 6MWD .with an increased risk of postoperative complications in group A than group B [26.3% vs 0 %, P-value 0.023] showing significant difference between the 2 groups regarding the post-operative pulmonary complication . Group A showed 5 patients (26.3%) had post-operative pulmonary complications, 1 patient had post-operative aspiration and edema, 2 patient had post-operative empyema, 1 patient had post-operative RF, mechanical ventilation & died, 1 patient had post-operative hemorrhage.

CONCLUSION: Patients who walked less than 500 m during the 6MWT before thoracotomy have an increased risk of postoperative pulmonary complications.

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