



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



HANAA ALY



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شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



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جامعة عين شمس

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قسم

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



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



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Risk factors of postoperative atrial fibrillation after on-pump CABG surgery

A Thesis

Submitted for Partial Fulfillment of master degree in **Critical Care**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

لَسْبِقَ أَنْتَ لَنَا
إِلَّا مَا عَلِمْنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
ABG	Arterial Blood Gas
ACC	American Colleague of Cardiology
ACCF	American Colleague of Cardiology Foundation
ACE	Angiotensin Converting Enzyme
AF	atrial fibrillation
AHA/ACC	American Heart Association\ American Colleague of Cardiology
ANS	Autonomic nervous system
APHRS	Asia Pacific Heart Rhythm Society
BMI	Body Mass Index
bpm	Beats Per Minute
Ca²⁺	Calcium
CABG	coronary artery bypass grafting
CBC	complete blood count
CCS	Canadian Cardiovascular Society
CKD	Chronic Kidney Disease
COPD	Chronic obstructive pulmonary disease
CPB	cardio pulmonary bypass

List of Abbreviations (Cont...)

Abb.	Full term
Cx	Connexin
CXR	Chest X-Ray
DC	Direct current
DCCV	direct-current electrical cardioversion
EACPR	European Association for Cardiovascular Prevention and Rehabilitation
EACTA	European Association of Cardiothoracic Anaesthesiology
ECG	Electrocardiogram
EF	ejection fraction
EHRA	European Heart Rhythm Association
ESC	European Society of Cardiology
FDA	Food and Drug Administration
HbA1c	Glycated haemoglobin
HIFU	High-Intensity Focused Ultrasound
HRS	Heart Rhythm Society
ICU	Intensive Care Unit
IL	Interleukin
K	Potassium

List of Abbreviations (Cont...)

Abb.	Full term
mEq/L	milliequivalent per liter
MI	Myocardial infarction
n-3 FA	N-3 Fatty Acids
Na	sodium
NAC	N-acetylcysteine
NADPH	Nicotinamide Adenine Dinucleotide Phosphate
NSAIDs	non-steroidal anti-inflammatory drugs
NYHA	New York Heart Association
OR	Odds Ratio
POAF	Postoperative atrial fibrillation
PUFAs	polyunsaturated fatty acids
RCTs	Randomized Controlled Trials
ROS	reactive oxygen species
SCA	Society of Cardiovascular Anesthesia
SPSS	Statistical Package for the Social Sciences
SR	sarcoplasmic reticulum
STS	Society of Thoracic Surgeons
TEE	transesophageal echocardiography
Vf	Ventricular fibrillation

Introduction

Acute or new-onset AF (termed postoperative atrial fibrillation (POAF)) is the most common complication after coronary artery bypass grafting (CABG), with an incidence of 10% to 40% (**Magee et al., 2007**).

The incidence of postoperative atrial fibrillation (POAF) is associated with increased rate of postoperative complications such as congestive heart failure, renal insufficiency, thromboembolic events and stroke, which prolong the length of hospital stay, increase rates of rehospitalisation and the overall cost of hospitalisation. Postoperative delirium and neurocognitive decline have also been associated with it (**Saxena et al., 2012**).

The aetiology and risk factors for POAF are poorly understood, but advanced age, pre-existing cardiac conditions that cause restructuring, and susceptibility towards inflammation have been consistently linked with POAF. Decades of research has explored interventions to prevent or limit the incidence of POAF, but most are only partially effective. Due to the widespread incidence and numerous comorbidities associated with POAF, additional research focusing on the precise mechanisms of its pathogenesis is needed to yield a greater understanding of this complication and produce more effective prophylactic and treatment options (**Greenberg et al., 2017**).

Several risk factors for postoperative AF had been reported, such as advanced age, genetic predisposition, chronic obstructive pulmonary disease (COPD), heart failure, valvular surgery, increased perioperative ischemia and postoperative pneumonia. Both pharmacological treatment (e.g. beta-blockers and amiodarone) and non-pharmacological (e.g. atrial pacing) have been used to treat and prevent POAF, but all therapeutic options have variable efficacy and some may adversely affect hemodynamic stability. Identification of patients at high risk of POAF after cardiac surgery is vital for selection of the patients who might benefit from intensive prophylactic therapy or increased monitoring. Thus, an accurate model predicting the risk of POAF might help to define this challenging group preoperatively (**Helgadottir et al., 2012**)

Aim of the Work

The aim of this study is to study risk factors for development of postoperative atrial fibrillation in adults undergoing on-pump CABG surgery.