بسم الله الرحمن الرحيم


# شبكة المعلومـــــات الجامعية

# التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

# جامعة عين شمس

## التوثيق الالكتروني والميكروفيلم

## ﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
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**15 – 25c and relative humidity 20-40 %**


# بعض الوثائق الأصلية تالفة


# بالرسالة صفحات

# لم ترد بالأصـــل

# Comparison Of Early Postoperartive Outcome Between Off Pump Technique And Conventional Coronary Artery Bypass Grafting

Thesis submitted for M.D. degree in Cardiothoracic surgery

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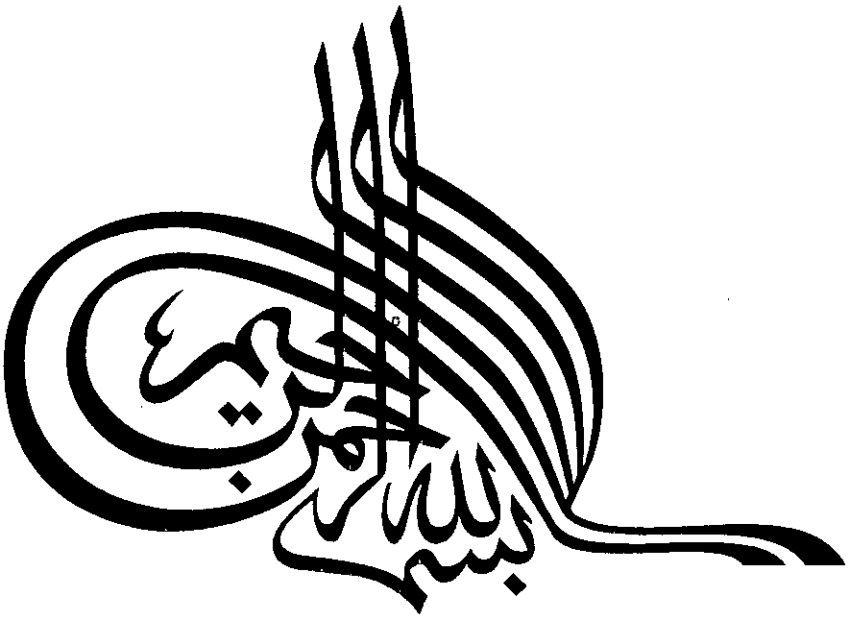
2005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محضر
اجتماع لجنة الحكم على الرسالة المقدمة من
الطبيب / _____
توطئة للحصول على درجة الماجستير / الدكتوراه
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تحت عنوان : باللغة الانجليزية Comparison of early postoperative out come Between off pump Technique And Conventional coronary artery Bypass Grafting

: باللغة العربية النتائج المبكرة لجراحة تروع الشريان التاجية بدون استخدام ماكينة القلب الصناعى مقارنة بالطرق التقليدية

.....

بناء على موافقة الجامعة بتاريخ ٢٠ / ٨ / ٢٠٠٥ تم تشكيل لجنة الفحص والمناقشة للرسالة المذكورة أعلاه على النحو التالى :-

١. ا.د مصطفى محمد رضوان ..... عن المشرفين
٢. ا.د محمود احمد البطاوى ..... ممتحن داخلى
٣. ا.د احمد محمود كامل احمد ..... ممتحن خارجى

بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم انعقدت اللجنة مجتمعة فى يوم الاحد بتاريخ ٢٠ / ٨ / ٢٠٠٥ بقسم جراحة القلب والصدر بكلية الطب – جامعة القاهرة وذلك لمناقشة الطالب فى جلسة علنية فى موضوع الرسالة والنتائج التى توصل اليها وكذلك الأسس العلمية التى قام عليها البحث .

قرار اللجنة : قبول الرسالة .

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توقيعات أعضاء اللجنة :-

| المشرف/الممتحن | الممتحن الداخلى | الممتحن الخارجى |
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عصام

# Abstract

***Background***. Off-pump coronary artery bypass grafting (OPCAB) surgery as an alternative method for surgical coronary artery revascularisation is still discussed controversially regarding its benefits compared with conventional coronary artery bypass grafting (CCAB) surgery. The aim of this study is to assess the differences in operative and early postoperative outcomes between CABG and OPCAB. ***Methods,*** between October 2000 and February 2004, 68 patients with isolated coronary artery disease subjected to coronary artery bypass grafting, 34 with the use of cardiopulmonary bypass and 34 without the use of it. Operative and early postoperative outcome was recorded in the 2 groups. ***Results,*** The mean number of grafts was 2.2±1.1 grafts in off pump group and 2.8±1.1 grafts in on pump group. Patients performed off pump had significantly lower blood transfusion (0.41±1units) when compared to on-pump patients (1.24±1.8units) ($p<0.001$). ). They also were significantly ventilated for shorter time (5.6 ±1.3 hours) when compared to on-pump patients (8.2±1.8 hours). less number of patients requiring inotropic support, lower morbidity, less ICU and hospital stay, and lower cost in the off pump group. Cardiac troponin I concentrations were significantly higher in the on pump group at hours 3, 6, 12, 24 and 48 than in the off pump group ($p < 0.001$). ***Conclusions,*** Off-pump techniques became one of the alternatives that should be available and mastered for a coronary surgeon. They should be used appropriately in indicated patients to achieve effective and safe revascularization. Although the efficacy of the techniques is well established, the long term follow-up results rate are still awaited.



***Keywords:*** Off pump, Coronary artery bypass, Troponin I, cardiopulmonary bypass, outcomes.

# Acknowledgment

First and Foremost thanks to "Allah", the most kind and the most merciful.

I would like to express my deepest gratitude to Prof. Dr. Mostafa Radwan, Professor of Cardiothoracic Surgery, Faculty of Medicine, Cairo University for his masterful teaching, continuous support, enthusiastic encouragement and correction.

I am also deeply indebted to Prof. Dr. Mohamed Fawzy Assistant Professor of Cardiothoracic Surgery, and Dr. Soliman Abd Al-Hay, Lecturer of Cardiothoracic surgery Faculty of Medicine, Cairo University for there valuable comments, remarkable suggestions and continuous encouragement.

My obligation is deep to all members in Cardiothoracic surgery department Cairo University and Suez Canal University for there decent encouragement generously offered with unremitting zeal.

Mohamed Amr

# List of Abbreviations

ACT: activated clotting time

ALCAPA: anomalous left coronary artery arising from the pulmonary artery

**b-FGF: basic fibroblast growth factor**

**BSA: Body surface area**

CABG: Coronary artery bypass grafting

CPB: Cardiopulmonary bypass

cTn I: Cardiac Troponin I

cTn T: Cardiac Troponin T

CTS: Cardiothoracic system

Cx: Circumflex coronary artery

GpIb: Glycoprotein Ib

HMWK: high-molecular-weight kininogen

IABP: Intra-aortic balloon pump

IVUS: Intravascular ultrasound

LAD: left anterior descending artery

LIMA: Left internal mammary artery

LITA: Left internal thoracic artery

LM: left main coronary artery

MIDA: Minimally invasive direct access

MIDCAB: Minimally invasive direct coronary artery bypass

NYHA: New York Heart Association

OM: Obtuse marginal coronary artery

OPCAB: off pump coronary artery bypass

PDA: Posterior descending artery

**PTEE: Polytetrafluoroethylene**

PTCA: Percutaneous translumirtal coronary angioplasty

RA: Radial artery

RCA: Right coronary artery

RIMA: Right internal mammary artery

RWMA: Regional wall motion abnormality

SVG: Saphenous vein graft

TCA: Thermal coronary angiography

TEE: Transesophageal echo

TFPI: tissue factor pathway inhibitor

t-PA: Urokinase type Plasminogen Activator

VEGF: vascular endothelial growth factor

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# Introduction

Myocardial revascularization on the beating heart was introduced several decades ago by Kolessov, Russian surgeon and pioneer of the early days of coronary artery surgery. This approach was largely abandoned, however during the 1960s, 1970s, and 1980s as a result of the introduction and development of techniques of extracorporeal circulation.

**(Calafiore, *2000)***

As cardiopulmonary bypass and electromechanical cardioplegic arrest became popular, many of the detrimental effects associated with these techniques were rapidly identified. Nonetheless, performing coronary artery surgery in a bloodless and motionless field maintained its appeal for many years. So that this technique remained by far the most commonly used among surgeons. ***(Parolari et al, 2003)***

While the popularity of coronary artery surgery on the arrested heart remained undisputed for decades, myocardial revascularization on the beating heart was not entirely abandoned. In fact, a few surgeons around the world continued to use this approach while exploring new techniques of beating heart coronary artery surgery, based on the belief that coronary revascularization could be performed equally successfully without cardiopulmonary bypass and electromechanical arrest. ***(Lunda et al, 2001)***

The pioneering effort of a few surgeons kept the interest in off pump coronary surgery alive. In addition, their efforts led to the publication of results of numerous investigations which conclusively proved the feasibility and the validity of this alternative approach to coronary artery surgery. As off pump coronary surgery gains popularity, the outcomes of patients undergoing these procedures have to be compared with those patients who have undergone conventional coronary artery bypass grafting.It is not clear whether coronary artery bypass grafting without cardiopulmonary bypass offers any significant short-term advantages over standard CABG with cardiopulmonary bypass.

**(Calafiore, *2000)***