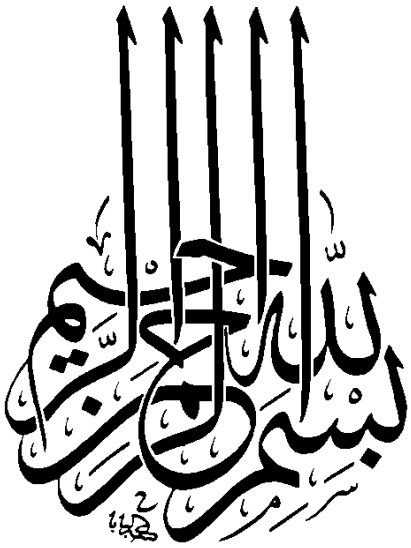

(قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ)

صدق الله العظيم

سورة البقرة آية (٣٢)

Impaired Flow-Mediated Dilatation and Risk of Restenosis in Diabetic Patient Undergoing Coronary Stent Implantation

Thesis

Submitted for Partial Fulfillment of the MD Degree
In ***Cardiology***

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ACKNOWLEDGEMENT

Thanks to God first and foremost. I feel always indebted to ***Allah,*** *the most kind and the most merciful.*

I would like to express my gratefulness and respect to ***Prof. Dr. Mohamed Awad Taher,*** *Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his moral and scientific support and for giving me the honor of working under his supervision and valuable guidance.*

Special thanks and deepest gratitude to ***Prof Dr. Amr Adel El-Sayed,*** *Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his constructive and instructive comments and valuable suggestions. Without his generous help, this work would not have been accomplished in its present picture.*

I would like to express my deepest thanks to ***Dr. Walid Abd El Azeem El-Hamaday,*** *Assistant Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his uninterrupted care and advice, his meticulous supervision, precious remarks and continuous encouragement.*

I would like to thank ***Dr. Ayman Samir Sadek,*** *Assistant Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his supervision and encouragement throughout this work.*

Miassa Othman Hamam ✍

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List of Abbreviations

Abbrev.	Full Term
ACC	American Colleague of Cardiology
ACS	Acute coronary syndrome
ADP	Adenosine di phosphate
AHA	American Heart Association
AMI	Acute myocardial infarction
ATP	Adenosine tri phosphate
BAD	Brachial artery diameter
BMS	Bare metal stent
CABG	Coronary Artery Bypass Grafting
CAC	Coronary artery calcification
CHD	Coronary heart disease
CRP	C- reactive protein
CVS	Cerebero-vascular stroke
DES	Drug eluting stent
DM	Diabetes mellitus
EC	Endothelial cell
EDHF	Endothelin-Derived Hyperpolarizing factor
EDRF	Endothelin derived relaxing factor

List of Abbreviations (Cont.)

Abbrev.	Full Term

EEL.....External elastic laminae.

EES.....Everolimus eluting stent.

ET.1.....Endothelin 1

FBF.....Forearm blood flow.

FFR:..... Fraction flow reserve

FH..... Family history

FMD..... Flow mediated dilatation

HDL..... High density lipoprotein

HTN..... Hypertension

IEL.....Internal Elastic Laminae

ISR..... Instent restenosis

IVUS..... Intra vascular ultra sound

LAD.....Left anterior descending artery.

LDL..... Low density lipoprotein

LVEF..... Left ventricular ejection fraction

LVH.....Left ventricular hypertrophy.

MACEs..... Major cardiac adverse events

NO..... Nitric oxide

List of Abbreviations (Cont.)

Abbrev.	Full Term
NOs	Nitric oxide synthase
NSTEMI	Non ST segment elevation myocardial infarction
OC	Optical coherence tomography
PA1	Plasminogen activator inhibitor
PCI	Percutaneous coronary intervention
PTCA	Percutaneous transluminal coronary angioplasty
PVD	Peripheral vascular disease
SES	Sirolimus –eluting stent
SICAM-1	Soluble intercellular adhesion molecule-1
STEMI	ST segment elevation myocardial infarction
SVD	Single vessel disease
TLR	Target lesion revascularization
Tpa	tissue plasmin activator
TVR	Target vessel revascularization
UA	Unstable angina
VSMC	Vascular smooth muscle cells

العلاقه بين اعاقه سريان الدم في الشرايين الطرفيه وانسداد الدعامات القلبيه في مرضي الداء السكري

رسالة
توطئة للحصول علي درجة الدكتوراه
في أمراض القلب

مقدمة من
الطبيبة /مايسه عثمان همام
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٢٠١٣

Introduction

The vascular endothelium performs an array of homeostatic function within normal blood vessels located between the blood lumen and the vascular smooth muscle cells, the endothelium is a monolayer of cells capable of transducing blood-born signals, sensing mechanical forces within the lumen and regulating vascular tone through the production of variety of vasoactive human factors[(1)].

Vasoactive produces both potent vasodilators such as endothelium derived relaxing factor (EDRF), nitric oxide (NO) and vasoconstrictors such as endothelin 1(ET.1).

Normally, the endothelium promotes vasodilatory functions in response to a variety of systemic, neurohumoral and mechanical stimuli.

In appropriate vasoconstriction characterizes the vascular response in patients with endothelial dysfunction[(2)].

An imbalance among the endothelium-derived counteracting vasoactive factors occurs in vascular segments damaged early in the atherosclerotic process.

Dysfunctional endothelium common in patients with cardiovascular risk factors leads to disturbances in coronary blood flow, promoting myocardial ischemia and accelerating the evolution of atherosclerosis and thrombosis.

Endothelium-dependant vasodilation not only operates in large (conductance) arteries but is also an important mechanism that controls dilation in small (resistant) vessels.

Although atherosclerosis does not directly involve resistant vessels, coronary risk factors markedly impair resistant vessel responses to endothelium dependent vasodilator stimuli[2]. Endothelial dysfunction in resistance vessels may be an important factor in preventing increase in coronary blood flow during times of augmented of metabolic stress.

Impaired endothelium–dependant dilation of coronary resistant vessels also accounts for some of the cases of syndrome X (patient with normal coronary angiogram-chest pain and evidence of stress induced myocardial ischemia.

Aim of the work

The aim of this study is to assess the relation of flow mediated dilatation impairment and clinical and aniographic outcome in diabetic undergoing elective percutaneous coronary stenting.

Subjects and Methods

The study included 60 diabetic patients coming for elective coronary stenting subdivided into 2 groups .the first one includes 30 patients with impaired flow-mediated dilatation and the second group includes another 30 patients with normal flow-mediated dilatation.

Inclusion Criteria:

Diabetic Patients who symptomatic for myocardial ischemia who undergoing elective percutaneous coronary stenting.

Exclusion Criteria:

1-Patients with incomplete revascularization

2-Stenosis of saphenous vein graft

3-Primary angioplasty for acute myocardial infarction

4-Balloon angioplasty without stent deployment.

5-Liver disease and renal failure with creatinine ≥3mg/dl

6-Non diabetic patients

All patients will be subjected to the following:

1-History taking

The patient is known to be diabetic. the patient was suffered from chronic stable angina (according to Canadian Cardiovascular classification and Braunwald's classification) and angina and ischemia after myocardial infarction .

The clinical history included cardiovascular risk factors (family history for cardio vascular disease, DM, hypercholesterolemia)

2-Complete clinical examination:

a) General examination: include weight, height, waist circumference, Blood pressure ,pulse(radial, apical& peripheral pulsation)
b) Local examination: for addationl sounds , murmurs and evidence of heart failure .

3-Twelve lead electerocardiogram (ECG):

Looking for ischemic changes in the form of (ST deviation , T wave changes and pathological Q waves)and arrhythmia.

4-Echocardiography:

To assess Left ventricular dimensions ,global systolic function& segmental wall motion abnormalities (SWMA) score for all patients.

5-Laboratory investigations:

Lipid profile (serum triglycerides ,total cholesterol,HDL,LDL level). Blood glucose level, ESR,CRP& renal and liver function.

6- Elective percutaneous coronary angiography (PCI):

Will be introduced under standard technique .In all patients PCI will be performed with conventional technique.