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### Study of Ischemic Threshold Measured During Dobutamine Stress Echocardiography Before and After Percutaneous Transluminal Coronary Angioplasty (PTCA)

Thesis Submitted for Partial Fulfillment of Master Degree in Cardiology

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# Acknowledgment

It was indeed an honor to have been supervised by **Prof. Dr. Omar Salah Awwad**, Professor of Cardiology, Faculty of Medicine, Ain Shams University. His incessant encouragement and fruitful remarks throughout the different phases of this work were of great value to me, along with the precious time he offered me in spite of his great responsibilities leave me really indebted.

I do feel greatly indebted and grateful to **Prof. Dr. Ihab Mohamed Attia**, Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his close supervision, encouragement, help, his valuable support, advice, and precious guidance which were kindly given.

I would like to express my deepest gratitude to **Prof. Dr. Hossam El Ghetany**, Assistant Professor of Cardiology, Faculty of Medicine, Ain Shams University, for his kind moral support, fruitful supervision, and valuable advice that are responsible for the production of this work.

Ahmed Abo Elela



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chamber view, (C) 2 chamber view.

### **List of Abbreviations**

CAD : Coronary artery disease

Diast. BP : Diastolic blood pressure

DSE : Dobutamine stress echocardiography

ECG : Electrocardiogram

HR : Heart rate

IHD : Ischemic heart disease

LAD : Left anterior descending artery

LBBB : Left bundle branch block

LCx : Left circumflex artery

LV Left ventricle

PPP : Heart rate pressure product

PTCA : Percutaneous transluminal coronary angioplasty

RCA : Right coronary artery

Syst. BP : Systolic blood pressure

WMS : Wall motion score

WMSI : Wall motion score index

# Introduction

Introduction (1)

## Introduction

PTCA has become an established means of myocardial revascularization. At present, the assessment of a given angiographic result and its correlation with impaired myocardial function under stress conditions is difficult. Exercise electrocardiography is not sufficiently sensitive especially in patients with single vessel disease undergoing angioplasty. Moreover, exercise thallium scintigraphy after successful angioplasty frequently reveals persistent reversible defects in the myocardial distribution of the dilated vessel (Fax et al., 1984) because it may take several weeks for these reversible defects to normalize, so this imaging approach is of limited value early after angioplasty.

Dobutamine stress echocardiography is an effective method for detecting coronary artery disease (Ruffalo, 1987). A major advantage of stress echocardiography is its excellent spatial resolution and its ability to interrogate the left ventricle in multiple cross-sectional views allowing better assessment of wall motion corresponding to the perfusion of individual coronary arteries (Kotler et al., 1990).

Dobutamine stress echocardiography may therefore be ideally suited to provide an accurate assessment of the early outcome of PTCA. Unlike exercise stress testing, it can be performed immediately after PTCA while the patient is still at bed rest (McNeill et al., 1992).

Dobutamine is a sympathomimetic agent with both positive chronotropic and inotropic effect, and it is the pharmacologic stress agent of choice to be combined with imaging techniques that assess left ventricular function including echocardiography (William et al., 1995).

Introduction (2)

## Aim of the Work:

To study the changes in the ischemic threshold before and after successful PTCA during dobutamine stress echocardiography.



# Review of Literature