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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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

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 ***(Fox 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)***.

Aim of the Work:

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

Review of Literature