A **Study of the Effect of IV Adenosine on the Conduction of Accessory Pathway after Radiofrequency Catheter Ablation**

Thesis

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By

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INTRODUCTION

An accessory pathway has been recognized as a strand of (usually) working myocardial cells connecting atrial and ventricular myocardium across the electrically insulating fibrofatty tissues of the AV junction at anatomic sites intended by nature (that is remote from the locus of the bundle of his) **(Michael et al,1999).**

Successful ablation of accessory pathway is defined as ablation of antegrade and retrograde connection over the accessory pathway and tachycardia control without medication. Radiofrequency catheter ablation is now the procedure of choice for patients with a variety of tachycardia **(Brandao and Carrageta, 1999).**

Manifest accessory pathway, have antegrade and retrograde conduction properties. A concealed accessory pathway has the only retrograde conduction. After successful ablation of accessory pathway, detection of complete success is proved by loss of retrograde conduction via accessory pathway.

Adenosine triphosphate (ATP) is a naturally occurring compound that plays an important role in many biochemical processes. It inhibits calcium channels causing a decrease in the conduction velocity of the atrioventricular (AV) node. At sufficient dose this causes transient AV nodal block.

Electrophysiologists use the ability of adenosine to selectively block the AV node to reveal “hidden” accessory pathways. By blocking AV node conduction, adenosine can reveal accessory pathway conduction and can help confirm successful pathway ablation **(Mr Ian Wright, March 2007)**

AIM OF THE WORK

This study is a prospective study which will detect the role of IV adenosine in unmasking the conduction of the accessory pathway post radiofrequency catheter ablation.

PATIENTS AND METHODS

This study will include 30 patients with manifest or concealed accessory pathway who will undergo radiofrequency ablation of accessory pathway, in EL-MAADI ARMED FORCES HOSPITAL.

Intracardiac tracings will be analyzed using the computer or the real tracings. Localization of accessory pathways will be studied by analyzing the following:

a. During sinus rhythm: The shortest AV signals recorded on coronary sinus 1.2, 3.4, 5.6, 7.8, 9.10, His bundle and right atrium.
b. During orthodromictachycardia: The shortest VA during orthodromic tachycardia.
c. During ventricular pacing: The shortest VA during pacing.

After ablation:

We will inject 6mg IV adenosine during atrial pacing to check the antegrade conduction of the accessory pathway and another 6mg of IV adenosine during ventricular pacing to check retrograde conduction of the accessory pathway.

The dose could be doubled to reveal any residual conduction of accessory pathway after ablation.

After using adenosine we will be able to detect any concealed accessory pathway that needs to be ablated to complete the successful ablation and prevent recurrence of tachycardia.

Statistical analysis:

The statistical analysis will be performed using the appropriate statistical method.

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- **Ian Wright,** Use of adenosine IN ELECTROPHYSILOLGY. Coronary Heart, March 2007 edition 5.p33-35.

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LIST OF ABBEREVIATIONS

AF	Atrial fibrillation.
AMP	Adenosine monophosphate
AP	Accessory pathway.
APD	Atrial premature depolarization
ART	Antidromic reentrant tachycardia
ATP	Adenosine triphosphate.
AV	Atrioventricular.
AVN	Atrioventricular node.
AVNRT	Atrioventricular node reentrant tachycardia.
AVRT	Atrioventricular reentrant tachycardia.
AS	Anterospetal.
C	Concealed.
CS	Coronary sinus
ECG	Electrocardiogram.
EPS	Electrophysiological study.
HB	His bundle.
HRA	High right atrium.
IU	International unit.
IV	Intra venous
LA	Left anterior.
LL	Left lateral.
LP	Left posterior.
LPS	Left posteroseptal.

M	Manifest.
MSEC	Milli seconds.
ORT	Orthodromic reentrant tachycardia.
PS	Posteroseptal.
RA	Right anterior.
RF	Radiofrequency.
RMS	Right midseptal.
RP	Right posterior.
RPS	Right posteroseptal
RVA	Right ventricular apex.
SR	Sinus rhythm.
SVT	Supraventricular tachycardia.
VA	Ventriculoatrial.
VPD	Ventricular premature depolarization.
WPW	Wolf-Parkinson-White.

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DEDICATION

To my family

To my beloved oneS

Without you, nothing is possible.