شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

Incidence of documented atrial arrhythmias in patients with dual chamber cardiac implantable devices

Thesis

Summited for Partial Fulfillment of Master Degree in Cardiology

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Mai Ellaban

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List of Abbreviations

Abb.	Full term
AF	Atrial fibrillation
AFL	Atrial flutter
AHRE	Atrial high rate episodes
AT	Atrial Tachycardia
AV	Atrioventricular
AVNRT	AV nodal re-entry
AVRT	AV re-entry via concealed bypass tract
BMI	Body mass index
CI	Confidence intervals
CIED	Cardiac implantable electronic devices
CRT	Cardiac resynchronization therapy
DC shock	Direct Current defibrillator
DDD	Dual chamber Device
DM	Diabetes Mellitus
ECG	Electrocardiogram
EF	Ejection Fraction
HbA1c	Hemoglobin A1c
HF	Heart failure
HR	Hazard Ratio
ICD	Implantable cardioverter defibrillator
ICH	Intracranial Hemorrhage
IHD	Ischemic heart disease
INR	International Normalized Ratio
LA	Left atrium
LAA	Left atrial appendage
LVIDd	Left ventricular internal dimensions (Diastole)

List of Abbreviations Cont…

Abb.	Full term
LVIDs	Left ventricular internal dimensions (Systole)
MOST	Mode Selection Trial
NOAC	Non-vitamin K antagonist Oral Anticoagulant
OAC	Oral Anticoagulants
OR	Odds ratio
PMT	Pacemaker-mediated tachycardia
PREVAIL	Prospective Randomized Evaluation of the Watch-man LAA Closure Device In Patients with AF Versus Long Term Warfarin Therapy trial
PSVT	Paroxysmal supraventricular tachycardia
r tPA	recombinant tissue plasminogen activator
ROC	Receiver operating characteristic curve
AUC	Area Under Curve
SA node	Sino-Atrial Node
SCAF	Subclinical AF
SEC	spontaneous echo contrast
SSS	Sick sinus syndrome
TEE	Trans-esophageal echocardiography
TIA	Transient ischemic attacks
TTR	Time in therapeutic range
VKA	Vitamin K antagonist

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INTRODUCTION

Permanent pacemakers are implanted to prevent or treat bradycardia caused by disorders of the cardiac conduction system ***(John, 2020).***

For more than 15 years, there have been two broad types of pacing systems: single chamber (ventricular) and dual chamber. The selection of either a single- or a dual-chamber pacemaker has clinical and economic implications ***(Albatat et al., 2020.***

Single-chamber ventricular pacing prevents bradycardia and death from ventricular standstill, but dual-chamber pacing better emulates normal cardiac physiology by restoring atrioventricular synchrony and matching the ventricular pacing rate to the sinus rate. As a result, dual-chamber pacing, as compared with single-chamber ventricular pacing, improves hemodynamic function ***(Toff et al., 2005).***

The DDD mode of dual-chamber cardiac pacing provides for sensing and pacing capabilities in both the atrium and ventricle, and for coordinated activity between the chambers ***(Palaksha et al., 2020).***

The application of pacemakers was extended to heart failure treatment using bi-ventricular pacing (cardiac resynchronization therapy, CRT), and now, CRT-D (cardiac resynchronization therapy with an implantable cardioverter

defibrillator [or ICD] function), effectively preventing sudden cardiac death, are now being used in clinical settings ***(Ismail et al., 2020).***

An implantable cardioverter defibrillator (ICD) is a device that monitors and responds to heart activity. ICDs have modes for pacing, wherein the device periodically sends a small electrical stimulus to the heart, and for defibrillation, wherein the device sends a larger shock to restore normal heart rhythm ***(Cao et al., 2020).***

Complications include infection; perforation, displacement, fracture, or insulation breakdown of the leads; oversensing or undersensing of the arrhythmia; and inappropriate shocks for sinus tachycardia or supraventricular tachycardia. Psychological problems are common, and counselling plays an important role. Regular follow up is required ***(Houghton et al., 2003).***

Atrial high rate episodes (AHREs) detected by cardiac implantable electronic devices (CIEDs) are associated with an increased risk of stroke. However, the impact of AHRE on improving stroke risk stratification scheme remains uncertain ***(Khan et al., 2020).***

Atrial fibrillation (AF) is the most common sustained arrhythmia, and is associated with increased risks of morbidity and mortality ***(Farah et al., 2020).***