Egyptian Atrial Fibrilation Registry Protocol

Thesis
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الإحصائية المصرية لمرضي الذبذبة الأذينية

رسالة

توطئة للحصول على درجة الماجستير في **أمراض القلب والأوعية الدموية**

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Summary

- Most of our study population were females 622 (62.2%) and males were only 378 (37.8%).
- The age of our patients was ranging from17 to 93with mean 44.07
- In addition, smoking were found to be non significant risk factors in 20.4%of our patients, 17.3% were diabetic,71.6 % were hypertensive.
- The patients most of them was permanat777 patients (77.7%), while152patients (15.2%) were paraxysomal and 41 patients (4.1%) were having1st onset and 30 patients (3.1%) were persistent.
- The patients with mitral regurge were found in 626 patient (62.6%) in which it was severe affection in 369 patient (36. 9%).
- The onset of the AF was more than 6 months in 828 patients (82.2%) while it was less than 6 months in 132 patients (13.2%) and it was unknown in 40 patients (4%)
- 906 patients (90.6%) have not expressed any complication while 94 patients (9.4%) have expressed AF complications.
- 52 patients (5.2%) have expressed cerebro vascular stroke
- 34 patients (3.4%) had peripheral embolization.

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List of abbreviations

2D	:	Two dimensionally
ACE	:	Angiotensin converting enzymes
AF	:	Atrial fibriallation
AFIB/FLT	:	Atrial fibriallation/flutter
AR	:	Aortic Regurge
ARBS	:	Angiotensin receptor blockers
AS	:	Aortic stenosis
AV	:	Atrioventricular
CHD	:	congenital heart disease
CHF	:	Congestive heart failure
CVS	:	Cerebrovascular system
CXR	:	Chest x-ray
DC	:	Direct current
DCC	:	Direct current cardioversion
ECG	:	Electrocardiogram
EF	:	Ejection fraction
FS	:	Fraction shortening
IHD	:	Ischemic heart disease
IV	:	Intravenous
K	:	Potassium
LA	:	Left atrium
LAA	:	Left atrial appendage
LAD	:	Left atrium dimensions
LVEDD	:	Left ventricular end-diastole dimensions
LVESD	:	Left ventricular end-systole dimensions
MR	:	Mitral regurge
MS	:	Mitral stenosis
NA	:	Not available
Na	:	Sodium
RA	:	Right atrium
SA	:	Sinoatrial
SVT	:	Supravenrticular Tachycardia
TIA	:	Transient Ischemic Attack
TTE	:	Transthoracic echo
US	:	united States

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الملخص العربي

المقدمة:

تعتبر الذبذبة الاذنيه من أنواع الاختلال الكهربائي للقلب المنتشرة في العالم ويمكن تقسيمها إلي متوحدة ومجهولة السبب ومتكررة و معاوده الاشتداد ومتواصلة وتكون مصحوبة بتغير ميكانيكي وكهربائي للأذين ومن ثم فان النتائج المترتبة علي عدم استقرار ديناميكيه الدم أثناء الذبذبة الاذينيه يمكن إن تؤدي إلي تمدد ووهن في عضله البطين الأيسر.

كماان الذبذبة الاذنيه تزيد مخاطر السكتة الدماغية وجلطات في الأوعية الدموية وغالبا ما يتزايد حجم الأذين الأيسر أثناء الذبذبة الاذينيه وكما ان الذبذبة الاذينيه إلي الانتظام الجيبي تؤدي إلي خلل مؤقت في الوظيفة الميكانيكية للأذين يسمي بالصعقة الاذينيه

وهذه الصعقة سببها الخلل ي ضربات القلب ولا تظهر في حاله عدم نجاح استعاده رسم القلب القديم وتتزامل مع ارتفاع مخاطر جلطات الأوعية الدموية.

الهدف من الدراسة:

أجريت هذه الدراسة لتسجيل نمط الإصابة بالذبذبة الاذينيه في مصر وأسبابه وعواقبه والطرق الفعلية المستخدمة في علاجه وكفاءتها في ذلك ومقارنتها بما يتم في الدول الاخري

المرضي والطرق:

طريقة البحث:

أجريت هذه الدراسة فى معهد القلب القومى وجامعة عين شمس على مدار عام فى الفترة ما بين فبراير ٢٠٠٩ وفبراير ٢٠١٠. وقد شملت الدراسة ١٠٠٠ مريض تم تشخصيهم بالذبذبة الاذينيه وتلقيهم العلاج داخل الرعاية والعيادات الخارجية.

وقد تم تسجيل الحالة المرضية لكل شخص وقد تم اجراء رسم قلب و موجات صوتيه علي القلب وتحاليل طبية لكل المرضي .

نتيجة الدراسة :

وقدكشفت هذه الدراسة إن نسبه المصابين بالذبذبيه الاذينيه في مصر اكثرهم من الإناث الأصغر عمرا المصابات بالصمام الميترالي نتيجة الحمي الروماتزمية والي تزيد نسبتها في المناطق النائية المنتشرة في مصر نتيجة الفقر والجهل.

وهذه النتائج تجعلنا نضع خطه لنشر الوعي الثقافي بالحمي الروماتزمية لتفادي المشاكل الناتجة عنها.

INTRODUCTION

The past decade has witnessed extraordinary growth in all fields of knowledge regarding atrial fibrillation.

The incidence of atrial fibrillation approximately doubles with each decade of adult life and ranges from 2 or 3 new cases per 1000 population per year between the ages of 55 and 64 years to 35 new cases per 1000 population per year between the ages of 85 and 94 years[1].

Atrial fibrillation is a supraventricular tachyarrhythmia characterized by uncoordinated atrial activation with consequent deterioration of mechanical function On the ECG, rapid, irregular, fibrillatory waves that vary in size, shape, and timing, replace consistent P waves, and there is an irregular ventricular response that is rapid when conduction is intact[2].

AF may occur in association with atrial flutter or atrial tachycardia clinical relevance. The clinician should distinguish a first-detected episode of AF, whether or not symptomatic or self-limited, recognizing the uncertainty about the actual duration of the episode and about previous undetected episodes. After 2 or more episodes, AF is considered recurrent. If the arrhythmia terminates spontaneously, recurrent AF is designated paroxysmal; when sustained beyond 7 d, it is termed persistent. Termination with pharmacological therapy or direct-current cardioversion does not alter the designation. First-detected AF may be either paroxysmal or persistent. The category of persistent AF also includes cases of long-standing AF (e.g., longer than 1 y), usually leading to permanent AF, in which cardioversion has failed.

Secondary AF in the setting of acute MI, cardiac surgery, pericarditis, myocarditis, hyperthyroidism, or acute pulmonary disease is considered separately. In these situations,

AF is not the primary problem, and concurrent treatment of the underlying disorder usually terminates the arrhythmia. The term lone AF applies to individuals younger than 60 y without clinical or echocardiographic evidence of cardiopulmonary disease, including hypertension[3].

The initial presentation of AF may be an embolic complication or exacerbation of HF, but most patients complain of palpitations, chest pain, dyspnea, fatigue, light headedness, or syncope which is an uncommon complication that can occur upon conversion in patients with sinus node dysfunction.

For patients with symptomatic AF lasting many weeks, initial therapy may be anticoagulation and rate control while the long-term goal is to restore sinus rhythm. When cardioversion is contemplated and the duration of AF is unknown or exceeds 48 h, patients who do not require long-term anticoagulation may benefit from short-term anticoagulation. If rate control offers inadequate symptomatic relief, restoration of sinus rhythm becomes a clear long-term goal. Early cardioversion may be necessary if AF causes hypotension or worsening HF.

Experimental studies have explored the mechanisms of the onset and maintenance of the arrhythmia; drugs have been tailored to specific cardiac ion channels; nonpharmacologic therapies have been introduced that are designed to control or prevent atrial fibrillation; and data have emerged that demonstrate a genetic predisposition in some patients[3].

The arrhythmia may be an independent risk factor for death, with a relative risk of about 1.5 for men and 1.9 for women after adjustment for known risk factors.

It has been suggested that, in patients with underlying ventricular dysfunction, this increased risk of death is due primarily to heart failure[4].

Whether the treatment of atrial fibrillation reduces mortality can be evaluated only by prospective, randomized trials. One such study, the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) trial, is currently being conducted in the United States[5].

Atrial fibrillation is associated with the loss of the atrial contribution to ventricular filling. This may result in a decrease in ventricular stroke volume of up to 20 percent.

The rate of ischemic stroke among patients with nonvalvular AF averages 5% per year, 2 to 7 times that of people without AF.23 One of every 6 strokes occurs in a patient with AF, and when TIAs and clinically "silent" strokes detected by brain imaging are considered, the rate of brain ischemia accompanying nonvalvular AF exceeds 7% per year[6].

AIM OF THE WORK

To characterize subset of patients presenting with Atrial Fibrillation emphasizing the clinical presentation and management strategy as a nucleus of Egyptian registry of Atrial Fibrillation.

Atrial fibrillation

Chapter One

History:

Because the diagnosis of atrial fibrillation requires measurement of the electrical activity of the heart, atrial fibrillation was not truly described until 1874, when Edmé Félix Alfred Vulpian observed the irregular atrial electrical behavior that he termed *"fremissement fibrillaire"* in dog hearts[12]. In the mid-eighteenth century, Jean-Baptiste de Sénac made note of dilated, irritated atria in people with mitral stenosis.11The irregular pulse associated with AF was first recorded in 1876 by Carl Wilhelm Hermann Nothnagel and termed *"delirium cordis"*, stating that "[I]n this form of arrhythmia the heartbeats follow each other in complete irregularity. At the same time, the height and tension of the individual pulse waves are continuously changing". Correlation of delirium cordis with the loss of atrial contraction as reflected in the loss of *a wave* in the jugular venous pulse was made by Sir James MacKenzie in 1904. [7] Willem Einthoven published the first ECG showing AF in 1906. The connection between the anatomic and electrical manifestations of AF and the irregular pulse of delirium cordis was made in 1909 by Carl Julius Rothberger, Heinrich Winterberg.

Epidemiology:

Atrial fibrillation is the most common arrhythmia found in clinical practice [8]. It also accounts for 1/3 of hospital admissions for cardiac rhythm disturbances8, and the rate of admissions for AF has risen in recent years[9]. Approximately 2.2 million individuals in the United States and 4.5 million in the European Union have AF[10].

The incidence of atrial fibrillation increases with age. The prevalence in individuals over the age of 80 is about 8%[11]. In developed countries, the number of patients with atrial fibrillation is likely to increase during the next 50 years, due to the growing proportion of elderly individuals[12].

During the past 20 y, there has been a 66%increase in hospital admissions for AF due to a combination of factors including the aging of the population, arising prevalence of chronic heart disease, and more frequent diagnosis through use of ambulatory monitoring devices. AF is an extremely costly public health problem,[13]with hospitalizations as the primary cost driver (52%), followed by drugs (23%), consultations (9%),further investigations (8%), loss of work (6%), and paramedical procedures (2%). Globally, the annual cost per patient is close to E3000 (approximately U.S. $3600).[14] Considering the prevalence of AF, the total societal burden is huge, for example, about EE13.5 billion (approximately U.S. $15.7billion) in the European Union.

prevalence and Incidence:

A recent report based on sub-analysis of Framingham data highlights the fact that AF poses a major public health burden, as the lifetime risk of developing AF from age 40 years onwards is approximately one in four for both men and women, and one in six even in the absence of congestive heart failure or myocardial infarction.9 Large-scale population-based studies estimated an overall prevalence of 0.9% in the US, which increased steadily to 3–5% in people older than 65 years, and to 10% or higher in people over 80 years of age. [15]Similar prevalence has been reported in the UK. [16] Incidence of AF increases exponentially with advancing the US and Europe, but possibly lower in Asia.[17]

Projected data from population-based studies, such as the Anticoagulation and Risk Factors In Atrial Fibrillation