



Characterization of atrial fibrillation in the Internal Medicine Service of the Mario Muñoz Monroy Hospital

Caracterización de la fibrilación auricular en el servicio de Medicina Interna del Hospital Mario Muñoz Monroy

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ABSTRACT

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Introduction: for a long time, atrial fibrillation was considered an alternative to sinus rhythm, and today it is a serious health problem in many countries around the world. It is the most common arrhythmia in clinical practice.

Objective: to characterize clinical-epidemiological variables of patients with atrial fibrillation diagnosed at the "Mario Muñoz Monroy" Hospital.

Methodological design: cross-sectional descriptive research was carried out at the "Mario Muñoz Monroy" Military Hospital, in the province of "Matanzas" in the period from January 2022 to February 2024. The study population consisted of 110 patients diagnosed with atrial fibrillation at the governing center.

Results: patients under 65 years of age (52,7 %), men (60,89 %), white skin color (56,36 %), and rural origin (66,36 %) predominated. Arterial hypertension and smoking were present in most patients with (41,81 % and 36,36 %) respectively. The most frequent clinical manifestations were palpitations (45 %) and dyspnea (33,4 %). In addition, atrial fibrillation with rapid ventricular response (70,9 %), and high risk of stroke predominated, according to CHA2DS2-VASc score (80,4 %). The most commonly used treatment was anticoagulation (54,54 %), and an average hospital stay between 8 and 14 days (60 %).

Conclusions: Atrial fibrillation is one of the most common arrhythmias, with a high health cost and a worsening of quality of life; therefore, activities aimed at early detection and timely treatment are essential.

Keywords: Anticoagulants; Cardiac arrhythmia; Atrial fibrillation; Prevalence

RESUMEN

Introducción: durante mucho tiempo la fibrilación auricular fue considerada una alternativa al ritmo sinusal, en la actualidad es un serio problema de salud en muchos países del mundo. Es la arritmia más frecuente en la práctica clínica.

Objetivo: caracterizar variables clínico-epidemiológicas de pacientes con fibrilación auricular diagnosticados en el Hospital "Mario Muñoz Monroy".

Diseño metodológico: se realizó una investigación, descriptiva de corte transversal en el Hospital Militar "Mario Muñoz Monroy", de la provincia "Matanzas" en el período de enero 2022 a febrero 2024. La población de estudio quedó integrada por 110 pacientes con diagnóstico de fibrilación auricular en el centro rector.

Resultados: predominaron los pacientes menores de 65 años (52,7 %), hombres (60,89 %), color de piel blanca (56,36 %) y procedencia rural (66,36 %). La hipertensión arterial y el tabaquismo estuvieron presentes en la mayoría de los pacientes con (41,81 % y 36,36 %) respectivamente. Las manifestaciones clínicas más frecuentes fueron la disnea (33,4 %) y las palpitaciones (45 %). Además, predomina la fibrilación auricular con respuesta ventricular rápida (70,9 %), y el alto riesgo de accidente cerebro vascular según puntaje de CHA₂DS₂-VASc con (80,4 %). El tratamiento más empleado fue la anticoagulación (54,54 %), y un promedio de estadía hospitalaria entre 8 y 14 días con (60 %).

Conclusiones: la fibrilación auricular es una de las arritmias más frecuentes, con alto coste sanitario y con un empeoramiento de la calidad de vida; por lo que, son fundamentales las actividades encaminadas a la detección precoz y al tratamiento oportuno.

Palabras clave: Anticoagulantes; Arritmia cardíaca; Fibrilación auricular; Prevalencia

INTRODUCTION

Currently, one of the main causes of mortality worldwide is cardiovascular disease, which represents a public health problem. ⁽¹⁾ Cardiac arrhythmias represent a significant group within this entity, their real incidence is underestimated due to the high percentage that occur asymptotically and their diagnosis is a discovery; among them, the most frequent worldwide is atrial fibrillation (AF). ⁽²⁾

Atrial fibrillation is the most frequent sustained tachyarrhythmia in humans and its management requires a holistic approach for optimal results. ^(2,3) It has a prevalence of 0,51 in the world population and it is known that a man has a 23,8 % life risk of suffering from atrial fibrillation, while in women it is 22 %. This condition increases the risk of suffering a cerebrovascular event fivefold, the risk of heart failure threefold and the risk of dementia twofold. From the above, it is deduced the importance of receiving appropriate treatment. ^(4,5,6)

AF is a supraventricular tachyarrhythmia characterized by uncoordinated atrial activation, which is associated with impaired mechanical function of both atria, chaotic (disorganized and rapid) electrical activity, turbulent blood flow, or coagulability disorders. ⁽⁷⁾ It is characterized electrocardiographically by low amplitude basal oscillations (called fibrillatory waves or f waves), instead of defined P waves; and by a completely irregular ventricular rhythm (R-R interval). The f waves have a frequency of greater than 350 contractions per minute and vary in amplitude, shape, and duration. The ventricular rate usually exceeds 90 beats/min. ^(7,8)

There are several risk factors for suffering from this arrhythmia, including: high body mass index, high blood pressure, diabetes mellitus, coronary disease, valvular disease (especially moderate to severe mitral stenosis) and heart failure. ⁽⁹⁾ All of these factors contribute, independently or dependently, to the development of arrhythmia; however, the prevalence of each of these varies between men and women, hence the differences that may exist between the forms of presentation and epidemiology, between both genders. Likewise, it has been shown that atrial fibrillation has a partially heritable behavior, which suggests that there may be some genetic differences between the sexes. ^(9,10)

Due to all of the above and the high incidence of this entity, both internationally and nationally; As well as the need for an accurate diagnosis and timely treatment to prevent future complications, the present investigation aims to characterize clinical-epidemiological variables of patients with atrial fibrillation diagnosed at the "Mario Muñoz Monroy" Military Hospital.

MATERIALS AND METHODS

An observational, descriptive, cross-sectional study was conducted on patients admitted with AF to the internal medicine service of the "Mario Muñoz Monroy" Military Hospital in Matanzas, Cuba; from January 2022 to February 2024. The universe was composed of 110 patients with AF, treated in the aforementioned service.

The demographic variables were analyzed: sex (male and female) and age group (under 65, 65-74, 75-84 and over 85); skin color (white, black and mixed race); patient origin (rural, urban); personal medical history and toxic habits (diabetes mellitus (DM), chronic obstructive pulmonary disease (COPD), ischemic heart disease (IHD), arterial hypertension (AH), nephropathy, heart failure (HF), hyperthyroidism, hypercholesterolemia, obesity, bronchial asthma (BA), cerebrovascular disease (CVA), smoking,

alcoholism and not reported); forms of presentation of AF (first time, persistent paroxysmal, long-term persistent and permanent); symptoms and signs (palpitations, fatigue, dizziness, syncope, dyspnea, chest pain and others); forms of presentation (slow ventricular response, rapid ventricular response and normal ventricular response); risk factors for AF-associated embolism according to the CHA2DS2VAS scale (11) (C (IC), H (High blood pressure), A (Age \geq 75 years), D (Diabetes mellitus), S (Previous stroke), V (vasculopathy), A (Age 65-74 years), S (Female sex)); and hospital stay (1-7 days, 8-14 days, more than 15 days).

Likewise, the clinical records of the Mario Muñoz Monroy Military Hospital archive were used as a source. The data collected were entered into a data collection form, and these were entered into a spreadsheet in the Microsoft Excel program to be processed in the SPSS statistical package version 21.0 for Windows and represented in tables and/or graphs as appropriate. For the analysis and interpretation of the results, percentage analysis was used.

The research was carried out with prior approval of the Medical Ethics Committee and the Scientific Council of said hospital. It was carried out as described in its start protocol and the recorded data were used only for scientific purposes in accordance with the ethical principles of research included in the Declaration of Helsinki and subsequent revisions.

RESULTS

Males predominated with 67 patients for 60,89 % and with a bimodal behavior the age groups 66-74 and over 85 years with 19,08 %. In those over 85 years of age, both sexes affected by AF were equal with 10 % of the total (Table 1).

Table 1: Distribution of patients with AF according to sex and age groups at the Matanzas Military Hospital from 2022 to February 2024

Age groups (years)	Sex				Total	
	Male		Female		No	%
	No	%	No	%		
≤ 65	37	33,63	21	19,09	58	52,7
66 - 74	12	10,90	9	8,18	21	19,08
75 - 84	8	7,27	2	1,81	10	9,08
≥ 85	10	9,09	11	10,0	21	19,09
Total	67	60,89	43	39,08	110	100

Source: Medical Records of the Matanzas Military Hospital



The rural area of origin predominated in both sexes with 73 patients for 66,36 % and white skin color with 56,36 % (Table 2).

Table 2: Distribution of patients by sex according to area of origin, skin color

Area of origin	Sexo				Total	
	Male		Female			
	No	%	No	%	No	%
Rural	47	42,72	26	26,63	73	66,36
Urbana	20	18,81	17	15,45	37	33,63
Total	67	60,89	43	39,08	110	100
Skin color						
White	34	30,9	28	25,45	62	56,36
Black	12	10,9	5	4,54	17	15,45
Mestizo	21	19,09	10	9,09	31	28,18
Total	67	60,89	43	39,08	110	100

Source: Medical Records of the Matanzas Military Hospital

Dyspnea and palpitations were shown to be predominant with 34,54 % and 25,45 % respectively and rapid ventricular response with 70,90 % of the sample (Table 3).

Table 3: Distribution of patients according to symptoms and signs, and ventricular response

Symptoms and signs	No	%
Palpitations	28	25,45
Fatigue	25	22,72
Dizziness	23	20,90
Syncope	7	6,36
Dyspnea	38	34,54
Chest pain	20	18,18
Irregular heart rate	10	9,09
Extrasystoles	3	2,72

Others	18	16,36
Ventricular response	No	%
Rapid	78	70,90
Slow	13	11,81
Normal	19	17,27

Source: Medical Records of the Matanzas Military Hospital

Hypertension and IHD are the personal pathological histories most associated with AF, with 41,81 % and 21,81 % respectively, associated with smoking habits in 63 patients for 57,27 % of the total (Table 4).

Table 4: Distribution of personal pathological histories and associated risk factors in patients with AF

Medical history	No	%
Diabetes Mellitus	18	16,36
COPD	6	5,45
Ischemic heart disease	24	21,81
High blood pressure	46	41,81
Nephropathy	2	1,81
Heart failure	7	6,36
Hyperthyroidism	3	2,72
Hypercholesterolemia	11	10
Obesity	8	7,72
Not reported	17	15,45
Toxic habits	No	%
Alcoholism	19	17,27
Smoking	63	57,27
Not reported	28	25,45
Total	110	100

Source: Medical Records of the Matanzas Military Hospital

The distribution according to the CHA2DS2VAS scale shows that hypertension, female sex and those over 75 years of age predominate in the scale predicting embolism. 88 patients with high risk according to the scale established in the protocols were obtained for 80,4 % of the sample (Table 5).

Table 5: Distribution of patients according to the CHA2DS2VAS scale

CHA2DS2VAS Scale	No	%
C (Heart failure)	7	6,36
H (High blood pressure)	46	41,81
A (age ≥ 75 years)	31	28,18
D (Diabetes Mellitus)	18	16,36
S (Previous stroke)	20	18,18
V (Vasculopathy)	19	17,27
A (age 65 to 74 years)	21	19,09
S (female gender)	43	39,09
Total	88	80,4

Source: Medical Records of the Matanzas Military Hospital

The average hospital stay of patients was between 8 and 14 days, with 66 representing 60 % of the sample, and the treatment used was predominantly anticoagulants, with 54,54 %, followed by antiplatelet agents, with 39 patients representing 35,45 % (Table 6).

Table 6: Distribution of the hospital stay of patients and the treatment used

Hospital stay (Days)	No	%
1 to 7	25	22,72
8 to 14	66	60
More than 15	19	17,27
Total	110	100
Treatment used	No	%
Anticoagulants	60	54,54
Antiplatelet agents	39	35,45
Mixed	11	10
Total	110	100

Source: Medical Records of the Matanzas Military Hospital

DISCUSSION

Cardiovascular diseases have progressively increased their incidence worldwide ⁽¹⁾, so much so that they have become the first cause of mortality; ^(1,2) among them, atrial fibrillation has a leading place. ⁽¹²⁾

From the position of the authors of this research, the increase in the frequency of cardiovascular disease is the result of the increase in life expectancy in Cuba; which, with longevity, predisposes the appearance of chronic heart diseases.

The demographic and clinical characteristics of this study present similarities with the majority of the research reports carried out both nationally and internationally consulted. This is highlighted by García Peña et al. ⁽¹³⁾

In a study carried out in Colombia, they stated that the prevalence of atrial fibrillation increased from 41 to 87 per 100 000 inhabitants between 2013 and 2017, and that it is more frequent after the age of 60, and they highlighted that rural areas have a higher prevalence with 150/100 000 inhabitants.

Recalde Bufaliza ⁽¹⁴⁾ highlights that in his study, the male sex predominated with 61,40 % of patients with AF, among the most frequent ages were those over 70 years old, Caucasians; there are other studies ^(14,15,16) where the male sex predominates in their results, ages over 75 years and white skin color; these results coincide with those obtained by the authors of the present research.

However, some authors such as Castro-Clavijo et al., ⁽¹²⁾ in their research results, highlight that the most frequent sex with cardiac arrhythmias was the female with more than 50 % of the sample, other authors agree with these results. ^(12,13) Although the results obtained in the present investigation, the male sex predominated, it was obtained that from the age of 80 there is a tendency for both sexes to equalize in relation to suffering from AF.

Related to the risk factors associated with AF, the researchers ^(11,14,15) suggest that hypertension occupies the first place with more than 50 % of the patients. These results coincide with those obtained in the presented research. Rodríguez-Reyes et al. ⁽¹⁰⁾ highlight that there are other risk factors related to AF such as, in order of frequency in their study, hypertension, obesity, DM, dyslipidemia and toxic habits such as smoking and alcoholism.

Therefore, the results obtained in the study coincide with those of said authors. In the opinion of the authors of this research, these results reaffirm that hypertension and DM are associated with AF, mainly the former influences the pathogenesis, treatment and evolution of AF and DM modifies atrial remodeling; therefore they predispose to arrhythmias, especially AF.

In the consulted investigations ^(2,16,17) palpitations and dyspnea are recorded as the most frequent symptoms and accelerated ventricular response as the form of presentation in the emergency department at diagnosis. Sariol-González et al. ⁽¹⁹⁾ found that tobacco consumption was the most determining risk factor with 85,80 %, related to the form of rapid ventricular response, and with dyspnea as the main symptoms of presentation associated with palpitations; they emphasize in their study that pharmacological cardioversion was the most used treatment (56,50 %).

Castillo-Barrios ⁽²⁰⁾ suggests that AF increases the risk of suffering a cerebrovascular event of cardioembolic origin up to five times, independently of other risk factors, and highlights the importance of using the CHA2DS2-VASc scale for the evaluation of cardiometabolic risk. Several authors ^(14,21,22) use this scale in their studies.

Authors of various investigations suggest that hospital stays vary according to comorbidities and the age of the patients. For example, Freeman et al. ⁽²³⁾ obtained an average stay of 3,5 days; Cadavid-Zuluaga et al. ⁽²⁴⁾ of 6,62 days. In the present study, patients with prolonged stays between 8 and 14 days predominated. These results may be related to the comorbidities present in the patients and the high risk (80 %) of embolism according to the scale analyzed.

Authors such as Baños-González et al. ⁽²⁵⁾ explain the importance of using the prognostic scale of cardiometabolic risk in AF and the use of anticoagulants and antiplatelet agents to reduce embolic events (stroke, IHD, and others). Others highlight the results of their studies that they used oral anticoagulants more frequently ^(6,9,17), and that they reduced the possible complications of this disease, and there are even several studies with the use of new anticoagulants that provide fewer adverse reactions. ^(17,25)

The limitations of this descriptive study, which provides valuable information to characterize the clinical-epidemiological variables related to atrial fibrillation (AF) diagnosed in the population treated at the Military Hospital of Matanzas, are relevant. Although it offers significant results, these cannot be generalized, since the analysis in other populations could yield different results

depending on the demographic, ethnic, environmental, among other characteristics of the patients.

CONCLUSIONS

Atrial fibrillation is more common in the elderly population and negatively affects the quality of life of patients. A correct anamnesis and physical examination allow early detection of the main risk factors such as hypertension, obesity, DM, and dyslipidemia. The symptoms and signs that these patients present contribute to better treatment of the disease, thus avoiding the appearance of future complications.

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