Etiological and Clinical Profile of Atrial Fibrillation in Clinical Practice

Anil Roby, Manojan KK

a. Department of General Medicine, Sree Gokulam Medical College & Research Foundation, Trivandrum, Kerala, India*

ABSTRACT

Published on 23rd September 2019

Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia encountered in clinical practice. This study is on etiological and clinical profile of paroxysmal, persistent and permanent AF.

Materials & Methods: A hospital based descriptive study conducted among 94 patients, diagnosed as atrial fibrillation in cardiology department, from 2010 to 2012.

Results: Out of 94 patients with AF , 30.85% were aged between 50 – 59 yrs , and 61.7% were males and 38.29% were females. Permanent AF was seen in 57.57% patients.

Conclusions: Palpitation followed by dyspnoea was the major symptoms encountered with atrial fibrillation, and in males within the age group of 50 years and above are prone to develop AF.

Keywords: Atrial Fibrillation, Cardiac Rhythm, AF, Permanent AF

*See End Note for complete author details

BACKGROUND

Atrial fibrillation (AF) is the most commonly sustained cardiac rhythm disturbance, increasing in prevalence with age. AF is often associated with structural heart disease, although a substantial proportion of patients with AF have no detectable heart disease. Hemodynamic impairment and thromboembolic events related to AF result in significant morbidity, mortality, and cost. It is characterized by uncoordinated atrial activation with consequent deterioration of atrial mechanical function. On the electrocardiogram (ECG), AF is characterized by the replacement of consistent P-waves by rapid oscillations or fibrillatory waves that vary in amplitude, shape, and timing, and associated with an irregular, frequently rapid ventricular response when atrioventricular (AV) conduction is intact.[1]

The estimated prevalence of AF is 0.4% to 1% in the general population, increasing with age to 8% in those older than 80 years.[2] In prospective studies, the incidence of AF increases from less than 0.1% per year in those under 40 years old to 1.5% in women and 2% in men older than 80 years.[3,4] AF is associated with an increased long-term risk of stroke, heart failure, and all-cause mortality, especially in women. The rate of ischemic stroke among patients with nonvalvular AF averages 5% per year, which is 2 to 7 times that of people without AF.[4] In patients with rheumatic heart disease and AF in the Framingham Heart Study, stroke risk was increased to seventeen fold compared with age-matched controls, the attributable risk shows 5 times greater than that in those with nonrheumatic AF.[5]

Atrial fibrillation is clinically classified into first-detected AF, Recurrent AF (2 or more episodes) and long-standing AF. If recurrent AF reverts spontaneously in 48 hours it is called paroxysmal, and when sustained beyond 7 days, it is called persistent AF. Long-standing AF (more than 1 year or cardioversion failed) is called permanent AF.[6] Essential hypertension, ischemic heart disease, heart failure, valvular heart disease, and diabetes are the most prominent conditions associated with AF.[7] Lone AF or idiopathic AF accounts for 10 -15% of cases.[8]

MATERIALS AND METHODS

A descriptive study of 94 patients who presented with Atrial Fibrillation in the outpatient as well as

Cite this article as: Roby A, Roby A, Manojan KK. Etiological and Clinical Profile of Atrial Fibrillation in Clinical Practice. IMA Kerala Medical Journal. 2019 Sep 23;12(3):60–2.

Corresponding Author:
Dr Anil Roby, Associate Professor, Department of General Medicine, Sree Gokulam Medical College & Research Foundation, Trivandrum, Kerala, India. E-mail: anilrobyklm@gmail.com

Table 1. Age distribution of patients with AF

Age group (Years)	Male	Female	Total (percentage)
20 – 29	3	2	5 (5.3)
30 – 39	2	0	2 (2.1)
40 – 49	9	7	16 (17)
50 - 59	20	9	29 (30.9)
60 – 69	13	10	23 (24.5)
70 – 79	8	5	13 (13.8)
>80	3	3	6 (6.4)
Total	58	36	94 (100)

inpatients settings of department of Cardiology in a tertiary care hospital in Kerala State of India. The study was conducted during the period of January 2010 to January 2012. All patients with recurrent, paroxysmal, persistent and permanent AF were included in this study. The diagnosis of AF was made on the basis of history, clinical examination and confirmation with 12 leads ECG. Colour Doppler echocardiogram was done to confirm any structural heart disease.

RESULTS

Out of the 94 patients with AF, 58 (61.7%) were males and 36 (38.29%) were females. The majority of patients were between the ages of 50 – 59 years (30.85%) **(Table 1).**

Paroxysmal AF was seen in 14 patients (14.89%), persistent AF in 24 (25.53%) and permanent AF in 56 patients (59.57%). For thromboembolic prevention, AF is categorised into valvular AF and non-valvular AF. Valvular AF was seen in 25 patients (26.59%) and remaining 69 (73%) were non-valvular AF (Table 2). In patients with non-valvular AF, CHA2DS2VASc scoring was done. Among non-valvular AF, CHA2DS2VASc scoring >2 was seen in 37 (53.62%) patients. Among valvular AF, mitral valve disease was seen in 55% of patients. Lone AF was in seen 4 patients (4.25%).

Table 2. Distribution of AF patients based on etiology

Etiology	Male	Female	Total
Valvular	15	10	25 (26.5%)
Ischemic heart disease	8	7	15 (15.95%)
Sick Sinus Syndrome	7	5	12 (12.76%)
Hypertension	6	5	11 (11.70%)
Hypertrophic Cardiomyopathy	6	2	8 (8.51%)
Thyrotoxicosis	2	2	4 (4.25%)
Congenital heart disease	2	2	4(4.25%)
Lone AF	3	1	4 (4.25%)
Dilated Cardiomyopathy	2	1	3 (3.19%)
COPD	3	0	3 (3.19%)
EMF	2	1	3(3.19%)
Diabetes	2	0	2 (2.12%)

Table 3. Clinical presentation of atrial fibrillation

Clinical presentation	Frequency
Palpitation	29 (30.85%)
Breathlessness	21 (22.34%)
Chest Pain	17 (18.08%)
CVA	8 (8.51%)
Hypotension	7 (7.44%)
Syncope	6 (6.38%)
Asymptomatic	6 (6.38%)
Syncope	6 (6.38%)
Asymptomatic	6 (6.38%)

Palpitation (30.85%) was the most common presenting complaint encountered, followed by dyspnoea (22.3%), chest pain (18.08%) and stroke (8.5%).

In the management of AF, the heart rate control was achieved in 80 (85.10%) patients, rhythm control in 14 patients (14.89%) and oral anticoagulation (warfarin) was used in 75 patients (79.78%), all of them were valvular AF patients and those with CHA2DS2VASc score of more than two. 13 patients whose CHA2DS2VASc score were <2, were given only aspirin. Among patients on oral anticoagulation, 37 patients had a one year follow up in which it was found that oral anticoagulant in therapeutic range (INR 2 – 2.5) was seen only in 63% of patients.

DISCUSSION

In this study, the majority of the patients were males 58 (61.7%) compared to females (38.29%). Similar observations were made by the framingham heart study.[9] Valvular heart disease was the cause of AF in 26.5% of cases, followed by ischemic heart disease in 15.95%, and Lone AF was seen in 4.25% of cases. Palpitation was the most common presenting compliant encountered

Table 4. Distribution of patients based on treatment and outcome

Treatment	Achievement (percentage)
Rate Control	80(85.10%)
• Beta-blockers	59
• Verapamil	29
• Digoxin	8
Rhythm Control (Amiodarone)	14 (14.89%)
Oral Anticoagulation (Warfarin)	75 (79.78%)
Aspirin (CHA2DS2 VASc < 2)	13 (13.82%)
Pacemaker (VVI)	6 (8.51%)

followed by dyspnea, chest pain and stroke. These observations are similar to the finding from the study by Fuster et al.[10]

In this study the permanent AF was seen in 59.57% of cases, which is similar to the study reported from Argentina, where the 57% had permanent AF, and 56% were asymptomatic.[11] Oral anticoagulation was tried as mainstay of treatment in 79.78% of the cases in this study, and in another study shows 72.7% (95%CI: 63.5-79.0) cases the anticoagulation was started.[12]

All patients with non-valvular AF and a CHA2DS2 VASc score >2 were anticoagulated. Anticoagulation in therapeutic range was maintained only in 63% of cases. Direct current cardioversion for atrial fibrillation without oral anticoagulation is associated with a high risk of thromboembolism.[13]

CONCLUSION

The study provided insight in to potential risk factors for the occurrence of atrial fibrillation, such as valvular heart disease, ischemic heart disease, sick sinus syndrome, cardiomyopathies and also various presenting features of atrial fibrillation. Heart rate correction can be achieved in most of the patient with AF, and anticoagulation is the mainstay of treatment needed for most of the patients.

END NOTE

Author Information

1. Dr Anil Roby, Associate Professor
   Department of General Medicine
   Sree Gokulam Medical College & Research Foundation, Trivandrum, Kerala, India.
2. Dr Manojan KK, Professor
   Department of General Medicine
   Sree Gokulam Medical College & Research Foundation

Conflict of Interest: None declared

REFERENCES

1. S B. Clinical disorders of the heart beat. Clinics. 1946;5(1):190–234.
2. AS G, EM H, KA P, al et. Prevalence of diagnosed atrial fibrillation in adults: National implications for rhythm management and stroke prevention: the anticoagulation and risk factors in atrial fibrillation (atria) study. JAMA. 2001;285(18):2370–2375.
3. Psaty BM, Manolio TA, Kuller LH, et al. Incidence of and Risk Factors for Atrial Fibrillation in Older Adults. Circ . 1997;96 (7):2455–2461.
4. PA W, RD A, WB K. Atrial fibrillation: A major contributor to stroke in the elderly: the framingham study. Arch Intern Med. 1987;147(9):1561–1564.
5. PA, Wolf, Dawber TR, Thomas HE Jr KW. Epidemiologic assessment of chronic atrial fibrillation and risk of stroke: the Framingham study. Neurology. 28(10):973–7.
6. Members C, Fuster V, Rydén LE, et al. ACC/AHA/ESC Guidelines for the Management of Patients With Atrial Fibrillation: Executive Summary A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee . Circ . 2001;104 (17):2118–2150.
7. Wattigney WA, Mensah GA, Croft JB. Increasing Trends in Hospitalization for Atrial Fibrillation in the United States, 1985 Through 1999: Implications for Primary Prevention . Circ . 2003;108 (6):711–716.
8. Nieuwlaat R, Capucci A, Camm AJ, et al. Atrial fibrillation management: a prospective survey in ESC Member Countries: The Euro Heart Survey on Atrial Fibrillation . Eur Hear J . 2005;26 (22):2422–2434.
9. EJ B, Levy D, SM V, RB D, AJ B, PA W. Independent risk factors for atrial fibrillation in a population-based cohort: The framingham heart study. JAMA. 1994;271(11):840–844.
10. Fuster V, Rydén LE, Cannom DS, et al. ACC/AHA/ESC 2006 Guidelines for the Management of Patients With Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice . Circ . 2006;114 (7):e257–e354.
11. Albina G, DE Luca J, Conde D, Giniger A. Atrial Fibrillation: An Observational Study with Outpatients. Pacing Clin Electrophysiol PACE. 2014 Jul 16;
12. Giménez-García E, Clua-Espuny JL, Bosch-Príncep R, López-Pablo C, Lechuga-Durán I, Gallofré-López M, et al. [The management of atrial fibrillation and characteristics of its current care in outpatients. AFABE observational study]. Atencion Primaria Soc Esp Med Fam Comunitaria. 2014 Feb;46(2):58–67.
13. Hansen ML, Jepsen RMHG, Olesen JB, Ruwald MH, Karasoy D, Gislason GH, et al. Thromboembolic risk in 16 274 atrial fibrillation patients undergoing direct current cardioversion with and without oral anticoagulant therapy. Eur Eur Pacing Arrhythm Card Electrophysiol J Work Groups Card Pacing Arrhythm Card Cell Electrophysiol Eur Soc Cardiol. 2014 Sep 17