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Rare Case Report

Clinical Profile and Aetiology of Patients with Atrial Fibrillation in A Tertiary Care Hospital of Southern Karnataka

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ABSTRACT

Aim: To evaluate the clinical profile and aetiology of patients with Atrial Fibrillation. ***Materials and Methods:*** In the present study, a total of 50 patients with Atrial fibrillation were included. A detailed history of the patient concerning age, sex, gender, symptoms and aetiology were noted. ***Results:*** The maximum number of cases were in between the age group 60-79 years. Female cases were predominant over males representing 26 and 24. The most common presenting symptom in the study population was Dyspnoea in 82% of cases, palpitations in 38 cases, and pedal oedema in 31 cases. Rheumatic heart disease stands as a dominant aetiological character in 24 cases representing 48% followed by ischemic heart disease in 7 cases representing 14%. ***Conclusion:*** The study results conclude that Atrial fibrillation is more familiar in female cases than in male cases. Dyspnoea is a common symptom in Atrial Fibrillation patients and Rheumatic heart disease is the major cause of Atrial Fibrillation.

Introduction

Globally, atrial fibrillation (AF) stands as a prominent cardiac arrhythmia accounting for 1% of the population requiring treatment [1]. Increased risk of thromboembolic stroke is caused by AF (Figure 1) [2]. Hypertension, diabetes, prior stroke and congestive heart failure are some of the clinical features that predict the risk of stroke in AF. AF in connection with stroke has a higher mortality rate than AF without stroke [3,4]. It is necessary to screen patients above 65 years of age by an ECG to screen AF before the initial stroke. It is noted that patients below 40 years have an incidence rate of 0.1% per year and this rises to 2% in those above 80 years. Valvular heart disease is more common in women than men as a risk factor for atrial fibrillation. In addition to various risk factors, diabetes mellitus further doubles the risk for atrial fibrillation. The mechanisms of AF were electrical and autonomic remodelling, followed by structural remodelling and resistance to insulin [5-7].

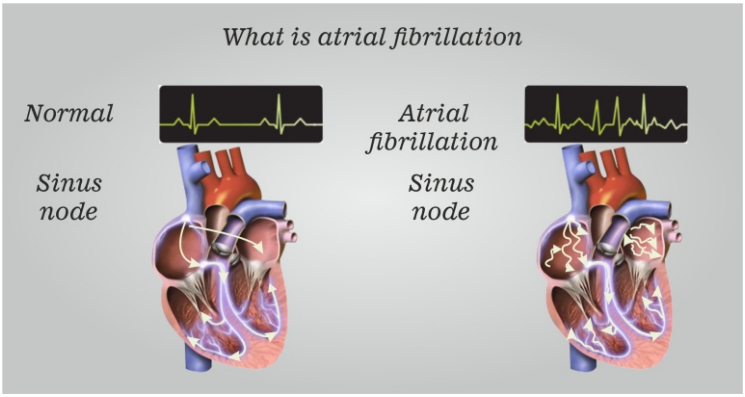


Figure 1: Illustration showing the atrial fibrillation

As per the American Heart Association, Atrial fibrillation is classified into the first episode, two or more episodes, paroxysmal i.e.; terminati-

-on within 7 days, persistent for more than 7 days and permanent for more than a year [8,9].

The study aims to evaluate the clinical profile and aetiology in patients of tertiary care hospitals in the southern region of Karnataka.

MATERIALS AND METHODS

This prospective observational study was conducted at our tertiary care hospital. Ethical clearance was obtained from the Institutional Ethical Committee before starting the work. A total of 50 patients were enrolled after obtaining informed written consent. A detailed history of age, sex, clinical features and aetiological factors were noted. The history was taken in detail for all the patients.

Inclusion criteria: Patients aged more than 18 years with clinical and electrocardiographically proven atrial fibrillatio-

-n were included in the study.

Exclusion criteria: Patients suspected to have atrial fibrillation clinically later proved to have different arrhythmia electrocardiographically were excluded from the present study.

STATISTICAL ANALYSIS

All the collected data was entered in an Excel sheet and frequency was calculated and represented.

RESULTS

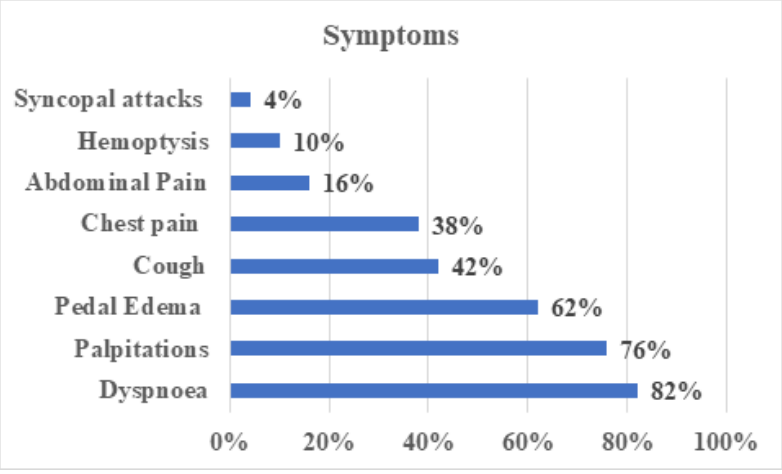
In the present study, among the studied cases. The maximum number of cases were in between the age group 60-79 years and the mean age range was found to be 54.84 ± 17.49 years. The distribution of cases as per age is tabulated below in Table 1.

Table 1: Age-wise distribution of patients.

Age in years	Number of patients	Percentage %
20-39	8	16.0
40-59	12	24.0
60-79	15	30
80 & above	5	10
Total	50	100

In the studied cases, the number of male patients with AF was found to be 24 and female patients were found to be 26 representing 48 and 52% respectively. The presenting symptoms in the studied cases were Dyspnoea in 41 cases, palpitations in 38 cases, pedal oedema in 31 cases, cough in 21 cases and chest pain in 19 cases and the percentage is represented in figure 2 below.

Figure 2: Symptoms of Atrial Fibrillation noted in the study population



Pulse, Pulse deficit and JVP were noted for the study participants and the result is depicted in the table 2 below.

Table 2: Vitals of the study participants

Vitals	Criteria	Number of patients (n=50)	Percentage (%)
Pulse	<90	12	24
	90 – 110	22	44
	> 110	16	32
Pulse deficit	10-20	30	60
	21-30	11	22
	31-40	3	6
	>40	6	12
Jugular Venous Pressure (JVP)	1-8	23	46
	>8	27	54

In the study pulse rate varied from 67/min to 180 /min. Between 60-90/min- 12 cases, 90-110/min – 22 cases and more than 110/min – 16 cases. The maximum number of cases was between 90-110/min. The pulse deficit in this study of atrial fibrillation varied from 12-100/min, the maximum being between 10-20/min, with 30 cases amounting to 60%. JVP was elevated in 27 cases (54%) and it was normal in 23 cases (46%).

The risk factors of the patients were assessed and are depicted in below figure 3.

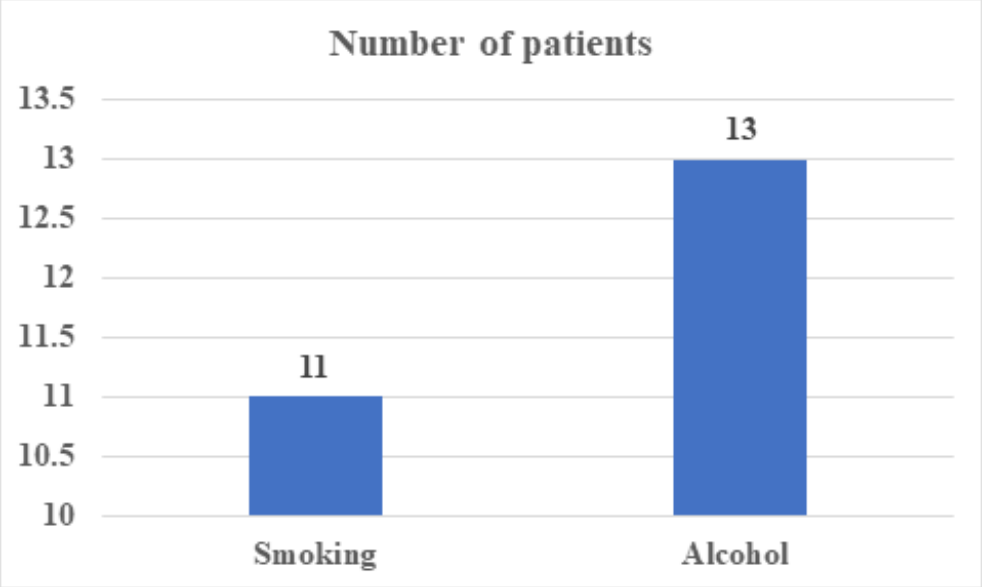


Figure 3: Risk factors of patients

The major risk factors noted in the studied population were smoking and alcohol. With smoking noted in 11 individuals and alcohol in 13 individuals which are the major factors for Atrial Fibrillation. This is the novel observation in the studied population.

The aetiological factors of the study participants were assessed and the result is depicted in below table 3.

Table 3: Aetiology of the study participants with Atrial Fibrillation

Aetiology	Number of Patients	Percentage (%)
RHD (Rheumatic Heart Disease)	24	48
IHD + HTN (Ischemic Heart Disease and Hypertension)	7	14
HTN	4	8
IHD	4	8
ASD (Autism spectrum disorder)	3	6
AIPO4 Poisoning	3	6
Cardiomyopathy	2	4
COPD (Chronic obstructive pulmonary disease)	2	4
Surgical stress	1	2

There were a maximum number of cases of rheumatic heart disease (RHD) i.e., 24 (48%) cases were found to be associated with atrial fibrillation. IHD + HTN was found in 7 (14%) cases only hypertension was found in 4 (8%) cases, ischemic heart diseases alone were detected in 4 (8%) of cases, ASD in 3 (6%) of cases, cardiomyopathy in 2 (4%) cases COPD in 2 (4%), surgical stress in 1 (2%) case. Aluminium phosphide poisoning was found to cause atrial fibrillation in 3 (6%) cases.

DISCUSSION

As Atrial Fibrillation has become progressively more prevalent in recent times, advances in knowing its pathophysiology are important. In the present study, we made an attempt to understand the clinical features of patients with atrial fibrillation and the recurring causes.

With respect to clinical profile, in the present study, dyspnoea is the most common presenting symptom in 41(82%) cases out of 50, followed by palpitations in 38(76%) cases, pedal o-edema in 31(62%) cases, cough in 21 (42%) cases and chest pain in 19(38%) cases. The study reports are comparable with the study of Kennel et al where dyspnoea was the predominant symptom followed by palpitation [10]. Another study by Tischer reported dyspnoea in 62% of cases and palpitations in 33% of cases [11].

With respect to aetiology, the predominant aetiology noted in atrial fibrillation in the present findings was rheumatic heart disease (RHD) in 24 cases representing 48% and then IHD + HTN was seen in 7 cases with 14%; hypertension in 4 cases with 8%, ischemic heart diseases in 4 cases of 8%, ASD in 3 cases of 6%, cardiomyopathy in 2 cases of 4% and surgical stress in 1 case representing 2%. This was comparable with another North Indian study where RHD is the most common cause of AF [12]. This is in contrast with Western countries where IHD is seen as the major cause of AF [13]. These results were supported by the literature where RHD, IHD, and HTN are predominant conditions in AF patients [14]. Another Indian study reports RHD as the major cause of AF

representing 37% followed by cardiomyopathy in 13%, HTN in 3% and IHD in 3% of cases [15]. Li K et al in their study established the fact that AF is familiar in patients with myocardial infarction (MI) and increases the mortality rate. It is also presented in a study that MI is significantly connected with the development of AF in men [16].

Apart from aetiological factors contributing to AF, there were a few cardiovascular risk factors which include smoking and obesity [17-19]. In the present study, there are 11 cases of smoking and 13 cases of alcohol consumption which might be the risk factors for AF. Alcohol is noted in the majority of individuals as a major risk factor in the studied population and is a novel observation.

The limitation of the study was, that we considered only one tertiary care centre and fewer samples.

CONCLUSION

To conclude, this is one of the seldom studies in the Karnataka region to find the symptoms and causes of Atrial fibrillation. Dyspnea is the major presenting clinical symptom noted in 82% of the cases. The predominant etiological factor was Rheumatic heart disease which is observed in 48% of the cases. Other risk factors were smoking and alcohol.

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CONFLICTS OF INTEREST

None

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None

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