



A STUDY ON CLINICO-ETIOLOGICAL PROFILE OF ATRIAL FIBRILLATION AT SVRRGH, TIRUPATI

General Medicine

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ABSTRACT

Background: Atrial fibrillation is one of the most commonly encountered cardiac arrhythmias. It is characterized by irregularly irregular cardiac rhythm altering the electrical and mechanical function of the atria. The incidence and prevalence of atrial fibrillation is increasing in older patients greater than 60 years of age. A large number of the patients with atrial fibrillation are underdiagnosed. Some of them are asymptomatic but in due course of time they develop a number of complications like cardiomyopathy, heart failure and cardio embolic stroke. This study is undertaken to find out the presenting symptoms and etiology of atrial fibrillation in Indian setting which facilitates an early diagnosis and initiation of appropriate treatment strategies. **Methods:** A hospital based cross sectional study was carried out on 100 patients who presented to SVRRGH, Tirupati between October 2021 to September 2022. Patients > 18 years with clinically and electrocardiographically proven atrial fibrillation who were haemodynamically stable were taken into the study. **Results:** In my study, breathlessness was present in majority-74% of patients followed by palpitations-57%, pedal edema-32%, chest pain-29%, giddiness-7%, weakness of limbs-6%, others-4%. Regarding etiology, past history of Rheumatic heart disease was present in 56% of patients, CAD in 24% of patients. Past history of Hypertension was present in 27% of patients, Diabetes Mellitus in 21% of patients, COPD in 11% of patients and 10% of patients had other diseases like hyperthyroidism, dilated cardiomyopathy, atrial septal defect. **Conclusion:** Rheumatic heart disease was the most common etiology for atrial fibrillation in our study. Hypertension was the second most common cause. Breathlessness was the most common complaint followed by palpitations. Males were more affected than female. Atrial fibrillation should therefore be suspected clinically, diagnosed earliest and treated appropriately to reduce further complications.

KEYWORDS

Atrial fibrillation, Clinical features, Etiology

INTRODUCTION:

Atrial fibrillation is one of the commonly seen tachyarrhythmias. It contributes to significant morbidity, mortality and health care costs. There is increase in the incidence and prevalence of atrial fibrillation in the recent years. It contributes to 33% of all arrhythmia related complications. It is a supraventricular tachyarrhythmia which is characterized by diffuse as well as disorganized atrial electrical activity replacing the normal sinus node function causing ineffective atrial contraction.¹

There are various modifiable and unmodifiable risk factors for the development of AF. Advancing age is the most important risk factor. It is more prevalent in males than in females. sedentary lifestyle, smoking, obesity, hypertension, diabetes, obstructive sleep apnea, underlying heart disease are the various risk factors predisposing to atrial fibrillation.²

Atrial fibrillation may be paroxysmal if it terminates spontaneously or persistent if lasts for more than 7 days or permanent if lasts longer than 1 year.³ Most common presenting complaints are palpitations, dyspnea, chest pain, giddiness. 15-30% of the patients may remain asymptomatic.⁴ Atrial fibrillation can cause various complications like stroke, extracranial systemic thromboembolism, dementia, heart failure, myocardial infarction, venous thromboembolism.²

AIMS AND OBJECTIVES:

- 1) To study the clinical profile of patients with atrial fibrillation.
- 2) To study the etiology of atrial fibrillation in the study population

MATERIALS AND METHODS:

Study design: cross sectional study

Study period: one year from October 2021 to September 2022

Study area: Sri Venkateswara Ram Narayan Ruia Hospital, Tirupati.

Sample size: 100

Inclusion Criteria:

Patients more than 18 years. Patients with clinically and electro cardiographically proven atrial fibrillation who are haemodynamically stable.

Exclusion Criteria:

Patients with atrial arrhythmias other than atrial fibrillation. Patients who are haemodynamically unstable.

METHODOLOGY:

100 patients with atrial fibrillation were analysed in this study. The following data was collected-

Age, sex, clinical symptoms, past history of hypertension, diabetes, hyperthyroidism, heart disease, COPD, obstructive sleep apnea, stroke, treatment history, smoking and alcohol history.

Diagnosis of atrial fibrillation was made using ECG showing absence of P waves, irregularly irregular rhythm. Further evaluation was done using 2D Echocardiography. Thyroid profile was done in required patients.

Clinical Examination:

general examination, vitals : pulse rate, pulse deficit, respiratory rate, blood pressure, JVP, systemic examination, signs of hyperthyroidism. LABORATORY DATA : RBS, lipid profile, thyroid profile in required patients, chest X ray, conventional 12 lead ECG with rhythm strip, 2D Echo.

Results:

The data was analysed using IBM SPSS software.

Table 1 : Age Distribution :

AGE IN YEARS	NUMBER OF PATIENTS	PERCENTAGE
<20	2	2%
20-40	26	26%
41-60	41	41%
>60	21	21%

Table 2 : Sex distribution :

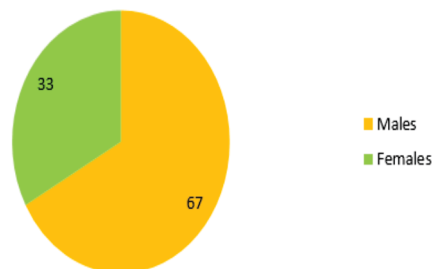


Table 3 : Possible etiology and risk factors :

PAST HISTORY	PERCENTAGE
Rheumatic heart disease	56%
Hypertension	27%
Coronary artery disease	24%
Diabetes mellitus	21%
COPD	11%
Others	10%

Table 4 : Other causes :

OTHER CAUSES	NUMBER OF PATIENTS	PERCENTAGE
Hyperthyroidism	5	50%
Dilated cardiomyopathy	4	40%
Atrial septal defect	1	1%

Table 5 : Presenting complaints :

PRESENTING COMPLAINT	NUMBER OF PATIENTS	PERCENTAGE
Breathlessness	74	74%
Palpitations	57	57%
Pedal edema	32	32%
Chest pain	29	29%
giddiness	7	7%
Weakness of limb	6	6%
Other	4	4%

Table 6 : Number of complaints :

NUMBER OF COMPLAINTS	NUMBER OF PATIENTS	PERCENTAGE
one	30	30%
two	34	34%
more than two	36	36%

DISCUSSION:

In my study, maximum number of patients were in the age group of 41-60 years. Distribution of atrial fibrillation was more in males(67%) than in females(33%). Rheumatic heart disease was the most common etiology which was seen in 56% of patients . Second most common predisposing factor was hypertension, seen in 27% of patients. The most common clinical features were breathlessness and palpitations seen in 74% and 57% of patients respectively. Most of the patients had two or more symptoms.

In study by W.B.Kannel et al. similar results were obtained. Prevalence of the disease was more in men. The risk of new onset AF doubled with each decade. Hypertension and diabetes were significant independent predictors of atrial fibrillation.⁵ In study conducted by Sahadeb Prasad Dhungana et al. the prevalence of atrial fibrillation was 120 out of 330 cases (36.3%) of Rheumatic heart disease. There was an independent association between age, left atrium size and mitral stenosis and development of atrial fibrillation in rheumatic heart disease patients.⁶

In study by Sachin Dhungel et al. Shortness of breath was the most common symptom(41%) followed by palpitations(27.8%) and stroke (24.6%). For valvular causes which was 75.1% the common lesion was of mitral valve (90%). Common risk factors were heart failure(56.5%), old age(42.8%), hypertension(30.5%), dilated cardiomyopathy (14.9%), ischemic heart disease(13.6%).⁷

In study by Jason Andrade et al. Valvular heart disease increased the risk of atrial fibrillation by 1.8-3.4 fold, hypertension increased the risk by 1.2-1.5 fold. Heavy alcohol consumption increased the risk by 1.34.46 fold.⁸

CONCLUSION :

Rheumatic heart disease was the most common cause of atrial fibrillation followed by hypertension. Shortness of breath and palpitations were the most common presenting complaints. Most patients had two or more complaints at the time of presentation. Males were more commonly affected than females. Hence awareness of clinical profile and etiological factors can help in early diagnosis and treatment thereby reduces the complications of atrial fibrillation.

REFERENCES:

- 1) Nayak, S., Natarajan, B., & Pai, R. G. (2020). Etiology, Pathology, and Classification of Atrial Fibrillation. *The International Journal of Angiology : Official Publication of the International Society of Angiology, Inc.*, 29(2), 65–71.
- 2) Staerk, L., Sherer, J. A., Ko, D., Benjamin, E. J., & Helm, R. H. (2017). Atrial Fibrillation: Epidemiology, Pathophysiology, and Clinical Outcomes. *Circulation*

Research, 120(9), 1501–1517.

- 3) Markides, V., & Schilling, R. J. (2003). Atrial fibrillation: classification, pathophysiology, mechanisms and drug treatment. *Heart (British Cardiac Society)*, 89(8), 939–943.
- 4) Rienstra, M., Lubitz, S. A., Mahida, S., Magnani, J. W., Fontes, J. D., Sinner, M. F., van Gelder, I. C., Ellinor, P. T., & Benjamin, E. J. (2012). Symptoms and functional status of patients with atrial fibrillation: state of the art and future research opportunities. *Circulation*, 125(23), 2933–2943.
- 5) Kannel, W. B., Wolf, P. A., Benjamin, E. J., & Levy, D. (1998). Prevalence, incidence, prognosis, and predisposing conditions for atrial fibrillation: population-based estimates. *The American Journal of Cardiology*, 82(8A), 2N–9N.
- 6) Dhungana, S. P., Nepal, R., & Ghimire, R. (2019). Prevalence and Factors Associated with Atrial Fibrillation Among Patients with Rheumatic Heart Disease. *Journal of Atrial Fibrillation*, 12(4), 2143.
- 7) Dhungel, S., & Laudari, S. (n.d.). Clinical Profile of Atrial Fibrillation in a Tertiary Hospital in Central Nepal. *JNMA: Journal of the Nepal Medical Association*, 56(207), 335–340.
- 8) Andrade, J., Khairy, P., Dobrev, D., & Nattel, S. (2014). The clinical profile and pathophysiology of atrial fibrillation: relationships among clinical features, epidemiology, and mechanisms. *Circulation Research*, 114(9), 1453–1468.