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Research Article

**A CROSS-SECTIONAL STUDY ON THE PREVALENCE OF
ATRIAL FIBRILLATION IN A TERTIARY CARE HOSPITAL**Asma Anjum¹, Ayesha Batool², Fouzia Khan³, Mujeeb Ur Rahman⁴^{1,2,3} Doctor Of Pharmacy Graduate, Deccan School Of Pharmacy, Owaisi Hospital And
Research Centre, Hyderabad⁴ Doctor Of Pharmacy Student, Deccan School Of Pharmacy, Owaisi Hospital And Research
Centre, Hyderabad**Abstract:**

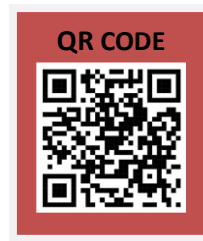
Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia and is associated with increased risks of stroke, heart failure, thromboembolism, and mortality. Determining its prevalence and clinical characteristics among hospitalized patients is important for improving patient management and outcomes.

Methodology: A hospital-based cross-sectional observational study was conducted among 150 patients admitted to the cardiology and general medicine departments of a tertiary care hospital over six months. Eligible patients were screened for AF using electrocardiographic evaluation. Demographic characteristics, clinical presentations, comorbidities, and treatment patterns were collected and analyzed using descriptive statistics.

Results: The overall prevalence of AF was 24% (36/150). AF was more common among patients aged above 60 years (50%) and males (61.1%). Palpitations (77.8%) and dyspnea (66.7%) were the most frequently reported symptoms. Hypertension (72.2%) and diabetes mellitus (50%) were the major associated comorbidities. Warfarin was the most commonly prescribed anticoagulant, and most patients had a hospital stay of 4–7 days.

Conclusion: AF is prevalent among hospitalized cardiovascular patients, particularly elderly males with multiple comorbidities. Early diagnosis and appropriate management are essential to reduce complications and improve clinical outcomes.

Keywords: Atrial Fibrillation, Prevalence, Cardiac Arrhythmia, Hypertension, Anticoagulants, Hospitalized Patients, Cardiovascular Disease, Risk Factors.

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INTRODUCTION:

Atrial Fibrillation (AF) is the most frequent sustained cardiac arrhythmia observed in the clinic. AF is an irregular electrical activity at high speed of the upper chambers of the heart, which causes ineffectiveness of the atrial muscle and irregularity of ventricular reaction, resulting in decreased efficiency of circulation. AF should be regarded as a public health problem because it leads to higher risks of developing stroke, heart failure, embolism, and cardiovascular death. Increased prevalence of AF has been registered worldwide for the last decades due to population aging, new lifestyle and the rise in cardiovascular diseases.^[1,2]

Atrial fibrillation is highly linked with aging and other associated diseases. Hypertension, diabetes mellitus, coronary heart disease, valvular heart disease, obesity, thyroid abnormalities, and renal dysfunction are some of the significant risk factors that cause AF. Older patients are at high risk because aging leads to remodeling of the atrial tissues. Some lifestyle-related risk factors like smoking, alcohol intake, stress, lack of physical exercise, and improper dietary behavior can lead to AF. Because of many risk factors, AF often develops among patients in tertiary care hospitals.^[3,4,5]

Some of the signs which a patient diagnosed with atrial fibrillation may exhibit include palpitation, chest pain, difficulty breathing, feeling dizzy, experiencing weakness, and syncope while some do not have any symptoms at all. The use of electrocardiography is the common way of diagnosing atrial fibrillation by noting an irregularly irregular rhythm in the heartbeat without clear P waves. Other tests including echocardiography, thyroid evaluation, electrolyte assessment, and ambulatory electrocardiography help in determining any underlying cause of atrial fibrillation and cardiac defects.^[6,7]

Although there have been significant improvements in the management of heart disorders and approaches towards treatment methods, atrial fibrillation remains a health problem that poses serious challenges across the globe. There have been many instances of hospitalization attributed to AF. The importance of determining the prevalence rate and clinical features of atrial fibrillation in hospitalized patients cannot be understated since this information is critical in developing prevention and treatment measures. With that said, this study sought to determine the prevalence rate of atrial fibrillation in hospitalized patients.^[8,9,10]

METHODOLOGY:

Study Design : A hospital-based cross-sectional observational study was conducted to evaluate the

prevalence of atrial fibrillation among patients admitted to a tertiary care hospital.

Study Site : The study was carried out in the Department of Cardiology and General Medicine of a tertiary care teaching hospital.

Study Duration : The total duration of the study was six months.

Study Population : All patients admitted to the cardiology and general medicine departments during the study period were screened for atrial fibrillation.

Sample Size : A total of 150 patients were included in the study based on study feasibility and patient availability during the study period.

Sampling Technique : A convenient sampling method was used. Eligible patients who satisfied the inclusion criteria were enrolled consecutively until the required sample size was achieved.

Inclusion Criteria

- Patients aged 18 years and above.
- Patients admitted to cardiology and general medicine wards.
- Patients diagnosed with cardiovascular disorders.
- Patients willing to participate in the study and provide informed consent.

Exclusion Criteria

- Pregnant women.
- Patients with severe psychiatric illness.
- Patients with incomplete medical records.
- Patients unwilling to participate in the study.

Study Procedure : Patients admitted to the cardiology and general medicine departments were screened for atrial fibrillation. Eligible patients who met the inclusion criteria were enrolled after obtaining informed consent. Demographic details, clinical history, ECG findings, laboratory investigations, associated comorbidities, and treatment patterns were collected using a structured data collection form. The collected data were documented systematically and analyzed statistically to determine the prevalence of atrial fibrillation among hospitalized patients.

Data Collection Tools

- Patient case sheets
- ECG reports
- Laboratory investigation reports
- Medication charts
- Structured patient data collection form

Statistical Analysis: The collected data were entered into Microsoft Excel and analyzed using statistical software. Descriptive statistics such as mean, standard deviation, frequency, and percentage were used to summarize the data. Results were presented in the form of tables, bar graphs, and pie charts wherever necessary.

RESULTS

Table 1: Demographic Characteristics of Study Participants

Parameters		Number of Patients (n=150)	Percentage (%)
Age	18–30 Years	18	12
	31–45 Years	32	21.3
	46–60 Years	44	29.3
	>60 Years	56	37.4
Gender	Male	88	58.7
	Female	62	41.3
Area of Residence	Urban	92	61.3
	Rural	58	38.7
Family History of Cardiovascular Disease	Present	48	32
	Absent	102	68

Among 150 study participants, the majority belonged to the age group above 60 years (37.4%), followed by 46–60 years (29.3%). Male patients constituted 58.7% while females accounted for 41.3%. Urban residents represented 61.3% of participants. Family history of cardiovascular disease was present in 32% and absent in 68% of patients.

Table 2: Prevalence of Atrial Fibrillation

Diagnosis	Number of Patients	Percentage (%)
Atrial Fibrillation Present	36	24
Atrial Fibrillation Absent	114	76

Out of 150 patients included in the study, 36 patients were diagnosed with atrial fibrillation, giving an overall prevalence of 24%. The remaining 114 patients (76%) did not show evidence of atrial fibrillation. The findings indicate a considerable occurrence of AF among hospitalized patients in the tertiary care setting.

Table 3: Type of Atrial Fibrillation Among AF Patients

Type of AF	Number of Patients (n=36)	Percentage (%)
Paroxysmal AF	14	38.9
Persistent AF	12	33.3
Permanent AF	10	27.8

Among the 36 atrial fibrillation patients, paroxysmal AF was the most common type observed in 14 patients (38.9%). Persistent AF was identified in 12 patients (33.3%), while permanent AF was seen in 10 patients (27.8%). Paroxysmal AF showed slightly higher prevalence compared to other AF types.

Table 4: Prevalence of Atrial Fibrillation Based on Age and Gender

Parameters		Number of AF Patients (n=36)	Percentage (%)
Age	18–30 Years	2	5.6
	31–45 Years	5	13.9
	46–60 Years	11	30.5
	>60 Years	18	50
Gender	Male	22	61.1
	Female	14	38.9

The prevalence of atrial fibrillation was highest among patients aged above 60 years, accounting for 18 patients (50%). Patients aged 46–60 years contributed 30.5% of cases. Male patients represented 61.1% of AF cases, whereas female patients accounted for 38.9%, indicating higher prevalence among males.

Table 5: Symptoms Observed Among AF Patients

Symptoms	Number of Patients (n=36)	Percentage (%)
Palpitations	28	77.8
Dyspnea	24	66.7
Fatigue	18	50
Chest Pain	15	41.7
Dizziness	10	27.8

Palpitations were the most frequently reported symptom among AF patients, observed in 28 patients (77.8%). Dyspnea was present in 24 patients (66.7%), followed by fatigue in 18 patients (50%). Chest pain and dizziness were reported in 41.7% and 27.8% of patients respectively among the diagnosed AF population.

Table 6: Associated Comorbidities Among AF Patients

Comorbidity	Number of Patients (n=36)	Percentage (%)
Hypertension	26	72.2
Diabetes Mellitus	18	50
Coronary Artery Disease	16	44.4
Heart Failure	14	38.9
Thyroid Disorders	6	16.7

Hypertension was the most common comorbidity among AF patients, present in 26 patients (72.2%). Diabetes mellitus was observed in 18 patients (50%), while coronary artery disease affected 16 patients (44.4%). Heart failure and thyroid disorders were identified in 38.9% and 16.7% of patients respectively.

Table 7: Treatment Pattern Among AF Patients

Drug Class	Drug Name	Number of Patients (n=36)	Percentage (%)
Anticoagulants	Warfarin	14	38.9
	Apixaban	10	27.8
	Rivaroxaban	6	16.7
Beta-blockers	Metoprolol	16	44.4
	Atenolol	10	27.8
Antiarrhythmic Drugs	Amiodarone	12	33.3
	Flecainide	6	16.7
Calcium Channel Blockers	Diltiazem	9	25
	Verapamil	6	16.7
Cardiac Glycosides	Digoxin	9	25

Warfarin was the most frequently prescribed anticoagulant, used in 14 patients (38.9%), followed by Apixaban in 10 patients (27.8%). Metoprolol was the most commonly prescribed beta-blocker, while Amiodarone was the major antiarrhythmic drug used. Diltiazem, Verapamil, and Digoxin were also prescribed for rate control and symptom management in AF patients.

Table 8: Duration of Hospital Stay Among AF Patients

Duration of Hospital Stay	Number of Patients (n=36)	Percentage (%)
1–3 Days	8	22.2
4–7 Days	18	50
>7 Days	10	27.8

Among 36 AF patients, the majority had a hospital stay duration of 4–7 days, accounting for 18 patients (50%). Ten patients (27.8%) stayed for more than 7 days, while 8 patients (22.2%) had shorter hospital stays of 1–3 days during their hospitalization period.

DISCUSSION

The present study included 150 hospitalized patients, among whom the majority belonged to the age group above 60 years (37.4%). Male patients accounted for 58.7%, while females represented 41.3% of the study population. Urban residents constituted 61.3% of participants, and family history of cardiovascular disease was present in 32% of patients. Increasing age and male gender are recognized contributors to atrial remodeling and cardiovascular disease progression. Similar findings were reported in the Cardiovascular Health Study, where AF prevalence increased significantly with age and was more common among males with cardiovascular disorders.^[11,12]

The current study identified atrial fibrillation in 36 out of 150 patients, giving an overall prevalence of 24%. Among AF patients, 50% were above 60 years of age, and 61.1% were males. The prevalence of AF increased with advancing age due to atrial fibrosis, structural cardiac changes, and associated comorbidities. Similar observations were reported in previous studies where older age and male gender were identified as major risk factors for AF prevalence. Nationwide studies among hypertensive and elderly populations also demonstrated significantly higher AF prevalence in older adults.^[13,14]

In the present study, palpitations were the most common symptom reported in 77.8% of AF patients, followed by dyspnea in 66.7% and fatigue in 50%. Hypertension was the major associated comorbidity observed in 72.2% of patients, followed by diabetes mellitus in 50% and coronary artery disease in 44.4%. These comorbid conditions contribute to atrial enlargement and electrical instability, increasing AF risk. Previous studies similarly demonstrated strong associations between hypertension, elderly age, and AF development. Researchers also highlighted that symptomatic AF significantly affects quality of life and cardiovascular outcomes.^[15,16]

The treatment analysis of the present study showed that Warfarin was prescribed in 38.9% of patients, Apixaban in 27.8%, and Rivaroxaban in 16.7% of patients. Metoprolol was the commonly prescribed beta-blocker, while Amiodarone was the major

antiarrhythmic drug used. Regarding hospital stay, 50% of AF patients remained hospitalized for 4–7 days and 27.8% stayed for more than one week. Previous studies emphasized the importance of anticoagulation and rate control therapy in reducing thromboembolic complications and mortality among AF patients. Elderly AF patients receiving proper management showed better cardiovascular outcomes and reduced complications.^[17,18]

CONCLUSION:

The present cross-sectional study demonstrated that atrial fibrillation is a common cardiovascular arrhythmia among patients admitted to a tertiary care hospital, with an overall prevalence of 24%. The condition was predominantly observed among elderly patients above 60 years and male individuals. Palpitations and dyspnea were the most frequently reported symptoms, while hypertension and diabetes mellitus were identified as major associated comorbidities. Anticoagulants, beta-blockers, and antiarrhythmic drugs were commonly prescribed for AF management. Early identification, continuous cardiac monitoring, appropriate anticoagulation therapy, and effective management of associated risk factors are essential to reduce complications such as stroke, heart failure, and hospitalization, thereby improving patient outcomes and quality of life.

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