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RISK FACTOR PROFILE IN PATIENTS DIAGNOSED WITH ATRIAL FIBRILLATION IN A TERTIARY CARE CENTRE – AN OBSERVATIONAL STUDY

Cardiology

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ABSTRACT

Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia seen in clinical practice. It is characterized by an irregular and often rapid heart rate. As people age, the risk of AF increases, making it more prevalent in older adults. Understanding the risk factors associated with AF is crucial for effective management and prevention of these adverse outcomes. **Aim:** To analyse the risk factor profile in patients diagnosed with atrial fibrillation. **Materials And Methods:** This is a descriptive study to analyse the risk factor profile in patients diagnosed with atrial fibrillation. The study was conducted in a tertiary care centre situated in Bengaluru from June 2024 to December 2024. Over a 7-month period, 102 patients diagnosed with AF were analysed. **Results:** Most patients diagnosed with AF were elderly (above 60 years old)-numbering to 82 patients (80%). Systemic hypertension and diabetes mellitus were the most common observed risk factors occurring in 69 (67%) and 60 (58%) patients respectively. .Obesity was reported in 34 patients (33%), while smoking was identified in 27 patients (26%).Hypothyroidism was observed in 24 patients (23%). Among heart diseases, CAD was the most prevalent, affecting 42 (41%) patients. **Conclusion:** Identification of risk factors in patients diagnosed with AF is essential for better prognostic and therapeutic decision making. Managing risk factors contributes to reducing disease activity, thereby improving both morbidity and mortality outcomes.

KEYWORDS

Atrial fibrillation, Risk factors, Heart diseases, Cardiovascular disease, Obesity.

INTRODUCTION

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia seen in clinical practice. It is characterized by an irregular and often rapid heart rate. Ongoing improvements of health and medicine, such as public health efforts, medical treatments and surgical interventions have prolonged life span and decreased mortality. This extended longevity has increased the risk of age-related diseases such as atrial fibrillation.[1] The lifetime risk of developing AF is approximately 25% and the incidence increases with age.[2] AF can lead to various complications including non-fatal and fatal stroke, heart failure, peripheral embolic events and has consequently increased morbidity and mortality.[3] Promotion of awareness and management of risk factors is needed to reduce vascular events.[4]

The reasons for the increase in prevalence are not fully clear but AF is influenced by age, gender, cardiovascular disease (CVD) such as valvular heart disease and cardiovascular risk factors such as hypertension, diabetes, obesity and insulin resistance.[5]

Risk factors for atrial fibrillation can be broadly categorized into modifiable and non-modifiable factors. Non-modifiable risk factors include age, genetics and family history which play a significant role in the likelihood of developing AF. Additionally, certain genetic predispositions and a family history of AF can elevate the risk.

Modifiable risk factors encompass lifestyle and health-related elements that can be managed or altered to reduce the risk of AF. These include hypertension, obesity, diabetes, excessive alcohol consumption, smoking, and physical inactivity.[6][4]Managing these risk factors through lifestyle changes, such as maintaining a healthy weight, controlling blood pressure, reducing alcohol intake, quitting smoking and engaging in regular physical activity can significantly lower the risk of developing atrial fibrillation.

In summary, identifying and addressing the risk factors for atrial fibrillation is essential for preventing the onset of this arrhythmia and managing its associated complications. Through a combination of risk factor modification and targeted medical interventions, patients with AF can achieve better health outcomes and enhanced quality of life.

MATERIALS AND METHODS

Study Design:

This is a descriptive study to analyse the risk factor profile in patients diagnosed with atrial fibrillation. The study was conducted in a tertiary care centre situated in Bengaluru from June 2024 to December 2024.

Study Population:

All inpatients and outpatients with an atrial fibrillation diagnosis were included in the study sample in order to analyse the risk factor profile.

Inclusion Criteria:

- Adults -18 years or older.
- Newly diagnosed with AF (diagnosis made within the last 30 days).
- History of prior atrial fibrillation or atrial flutter.

Exclusion Criteria:

- Pregnant women
- Lactating women
- Post Cardiac Surgery AF
- Extremely ill critical patients

Data Collection

Patient Enrolment

Eligible patients will be identified through the outpatient clinics and inpatient wards. Informed consent will be obtained from all participants prior to their inclusion in the study.

Clinical Data

Patient demographic information and medical history including age, gender, co-morbidities, and medication will be documented. Baseline laboratory tests and clinical assessments will also be recorded. The clinical data collected will encompass age, gender, body mass index, hypertension, diabetes, dyslipidaemia, obesity and smoking status as well as a medical history of coronary artery disease.

Methodology

Patients were enrolled in the study as per inclusion criteria after obtaining informed consent from patients or their representatives. A questionnaire was prepared which aimed at collecting patient demographics, clinical characteristics and risk factors. Questions pertinent to risk factors were obtained in detail. Most data were entered in the questionnaire by interview. A few data were obtained on

reviewing the medical records. The data was then compiled, statistically analysed and results were consolidated.

RESULTS

Complete data was obtained for a total of 102 patients of which 48 (47%) were male with mean age of 71.02 ± 14.17 and 54 (53%) were female with mean age of 69.5 ± 13.85.

The age distribution of patients diagnosed with atrial fibrillation (AF) was as follows: 5 patients (5%) were in the 18-40 years age group, 16 patients (16%) were in the 41-60 years range, 62 patients (61%) were in the 61-80 years range, and 19 patients (18%) were over 80 years old. Patients in the age range of 61 to 80 had the highest rates of atrial fibrillation. (Table 1.)

Modifiable risk factors such as diabetes mellitus, systemic hypertension, hypothyroidism, CKD and CVA were prevalent among the patients. Diabetes mellitus (DM) was found in 60 patients (58%) of which 31 were females and 29 were males; 16 patients had DM for less than 5 years, and 44 patients had DM for more than 5 years. Systemic hypertension (HTN) was present in 69 patients (67%) of which 33 were females and 36 were males; 5 had HTN for less than 5 years, and 64 for more than 5 years. Obesity was observed in 34 patients (33%),of which 13 were males and 21 were females while 27 patients (26%) were smokers all of whom were males. Among them, 16 were former smokers and 11 were current smokers. Hypothyroidism was observed in 24 patients (23%), of which 15 were females and 9 were males; 6 had Hypothyroidism for less than 5 years and 18 for more than 5 years. CKD was identified in 18 patients (17%), of which 11 were females and 7 were males; prior CVA was observed in 24 patients (23%), of which 13 were females and 11 were males; 22 cases were ischemic strokes and 2 were haemorrhagic strokes. (Table 2.)

Patients in the elderly age group (18 to 60 years) had a higher number of risk factors compared to those under 60 years of age. (Figure 2.)

Among the 102 patients analysed, 42 (41%) had coronary artery disease (CAD), 9 (8%) had rheumatic heart disease (RHD), 8 (7%) had degenerative valvular heart disease (DVHD), 7 (6%) had cardiomyopathy and 2 (1%) had congenital heart disease. Notably, 33 patients (32%) did not have any structural heart disease. (Figure 3.)

DISCUSSION

This risk factor profiling study showed that elderly people have higher tendency to develop atrial fibrillation than younger individuals. In our study mean age was 70.21 years. There was no significant gender difference observed in AF prevalence in our study. Systemic hypertension was the most common risk factor among patients, followed by diabetes mellitus, obesity, smoking and hypothyroidism. Among patients with heart diseases, coronary artery disease (CAD) was observed in the highest number of patients, accounting for 41% of cases. Interestingly, RHD was observed in 7% patients and most patients had mitral valve disease.

CONCLUSION

Identification of risk factors in atrial fibrillation is clinically relevant to improve mortality and morbidity in patients with AF. Newer drugs and therapeutic interventions in AF have definitely helped in improving the quality of life in patients with AF but prevention and control of risk factors is still beneficial for achieving good clinical outcomes. There is a need to intensely educate patients with AF regarding control of risk factors like hypertension, diabetes mellitus with lifestyle modification and drug therapy.

Tables

Table 1. Frequency And Percentage Distribution Of Various Age Groups And Genders Among Patients Diagnosed With Atrial Fibrillation. N=102

Patient's demographic details	f (%)
Age (in years)	
18-40	5 (5%)
41-60	16 (16%)
61-80	62 (61%)
Above 80	19 (18%)
Gender	
Male	48 (47%)
Female	54 (53%)

Table 2. Frequency And Percentage Distribution Of Various Modifiable Risk Factors Based On Gender And Duration Of Risk Factors:

Modifiable risk factors	Male	Female	Total = f (%)	Less than 5 years	More than 5 years
Diabetes mellitus	29	31	60 (58%)	16	44
Hypertension	36	33	69 (67%)	5	64
Hypothyroidism	9	15	24 (23%)	-	-
CKD	7	11	18 (17%)	-	-
CVA	11	13	24 (23%)	-	-
Obesity (BMI > 25kg/m^2)	13	21	34 (33%)	-	-
Smokers	27	0	27 (26%)	Former 16	Current 11

Charts

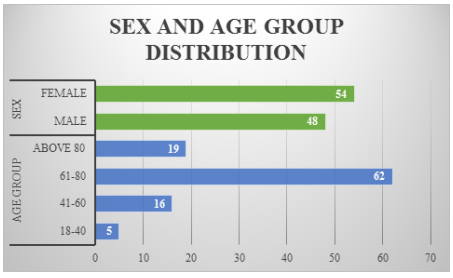

Figure 1: Frequency of various age groups and genders among patients diagnosed with Atrial Fibrillation.

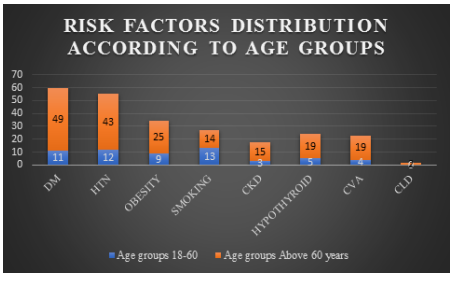

Figure 2: Frequency of distribution of different risk factors according to age groups.

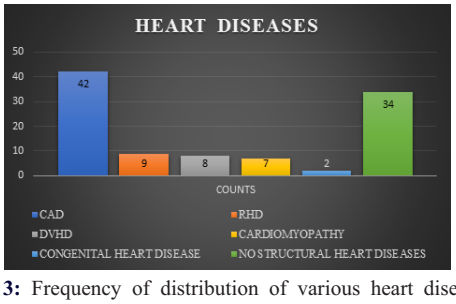

Figure 3: Frequency of distribution of various heart diseases in patients diagnosed with Atrial Fibrillation.

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