

# Atypical Atrial Fibrillation – How is it different from Typical Atrial Fibrillation: A Review Article

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**Abstract:** Atrial fibrillation is the most common type of treated heart arrhythmia and it is characterised by palpitations, sometimes fatigue, tiredness, presyncope, breathlessness, and chest discomfort. But palpitation is a cardinal symptom and defines Atrial Fibrillation. Based on the clinical presentation, Atrial fibrillation can be categorised as typical, with palpitations with or without other symptoms, and Atypical AF with symptoms other than palpitations. There can be a completely asymptomatic presentation that is called silent Atrial fibrillation.

**Keywords:** Atypical Atrial Fibrillation, Typical Atrial Fibrillation, Palpitations, Cryptogenic Stroke, Bleeding, Thromboembolism.

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## 1. INTRODUCTION

Atrial Fibrillation was first reported as irregular pulse in history by Jean Baptiste de senac in 1749<sup>(1)</sup>. Percentage of people affected with AF also dramatically increases with age 0.1% under 50 years old, 4% between 60 and 70 years old, and 14% over 80 years old being affected <sup>(3)</sup>. It also affects 1/3rd of all hospital admissions <sup>(4)</sup> for rhythm disturbances and 20-30% of all ischemic strokes <sup>(5)</sup>. Atrial fibrillation is characterised by palpitations, sometimes fatigue, tiredness, presyncope, breathlessness, and chest discomfort. But palpitation is a cardinal symptom and defines Atrial Fibrillation. Based on the clinical presentation, Atrial fibrillation can be categorised as typical, with palpitations with or without other symptoms, and Atypical AF with symptoms other than palpitations. Atypical atrial fibrillation (AAF) is a subtype of the most common cardiac arrhythmia, atrial fibrillation, which affects over 33 million people worldwide <sup>(3)</sup>. Unlike typical AF, which is characterized by rapid and irregular heartbeats, atypical AF is defined by the presence of complex, often slow and irregular atrial tachycardia. This type of AF is often difficult to diagnose and can be mistaken for other types of arrhythmias <sup>(1)(2)</sup>.

## 2. METHODS

Literature review from various journals and articles from Google Scholar and PubMed using keywords like Atypical Atrial fibrillation, Atrial fibrillation with no palpitations, irregular pulse, cryptogenic stroke, fatigue in elderly, Silent Atrial fibrillation, Bleeding risk in elderly. The information contained in this review will be synthesized and evaluated to provide a comprehensive overview of the current state of knowledge on atypical AF. The results of this review will inform future research and contribute to the development of improved diagnostic and treatment strategies for this complex form of atrial fibrillation.

## 3. DISCUSSION

Atrial fibrillation (AF) is a widespread form of heart rhythm disorder, affecting millions of people globally, including over 2.7 million in the United States <sup>(3)</sup>. Atypical atrial fibrillation (AAF) is a subcategory of AF characterized by irregular heartbeats that may not present any symptoms.

Despite its prevalence, the causes of AAF are not fully understood. Unlike typical AF that originates from a single source in the atria, AAF often arises from multiple sources, making it challenging to diagnose and treat <sup>(23)</sup>. Standard AF usually causes noticeable symptoms such as palpitations, causing patients to seek medical attention quickly. In contrast, AAF may

go unnoticed as symptoms such as fatigue, shortness of breath, or chest discomfort can be mistaken for other health issues or not be considered a priority for medical attention, especially if the patient has underlying health conditions such as COPD, asthma, bronchitis, orthostatic hypotension, diabetes, GERD, or gastritis.

Delaying medical attention in such cases can have severe consequences, making it challenging to determine the onset of AF. The expertise of physicians in treating AAF and early risk assessment are crucial factors in determining the outcome of these patients.

Ischemic stroke is one of the leading causes of morbidity and mortality among the elderly which greatly narrows the quality of life for which Atrial fibrillation is the main identifiable culprit. Silent Atrial fibrillation is common in elderly. Those who had no symptoms initially are 3 times more likely to have already endured stroke, implicating the importance of the vulnerable period for patients with asymptomatic AF or Atypical AF<sup>[1]</sup>.

There are many studies where symptomatic AF is enfolded. Like a study done in 2015 that included 10087 AF patients (2), showed that AF related symptoms decrease quality of life and has higher risk of hospitalisation although not mortality, And the importance of minimising the symptoms as to lower the resource utilisation.

Few studies showed that the 2 most powerful prognosticators for AF are AGE and SEX. There shows a gender differentiation with women reporting more atypical symptoms than men, more HF with preserved systolic function than men. Women had a higher chance for stroke than men<sup>[2]</sup>. As the incidence of atypical symptoms are more with female gender, women present with poorer outcomes since there is a delay in medical attention. This leads to reduction in quality of life and increase in depression rates in women with AF when compared to men with AF<sup>[3]</sup>.

CHADSVASC score is used widely to prognosticate the AF based on parameters like Age, Sex, Comorbidities (CHF, DM, HTN), Stroke, PAD, prior MI. Based on the score of risk factors mentioned above, it estimates the clinical risk for developing stroke<sup>[5]</sup>. On the contrary HASBLED scores can determine the bleeding risk in such a patient based on factors like HTN, abnormal Liver functions, Stroke, Bleeding, labile INRs, Elderly, Drugs or Alcohol. It is important to note that both the above scores are based on risk factors but not the type of presentations or symptoms onset<sup>[6]</sup>. A recently proposed ORBIT score which includes Older Age ( $\geq 74$ ), Reduced haemoglobin/anaemia, Bleeding history, Insufficient kidney function, Treatment with antiplatelet is a simple score with chief ability to predict major bleeding. But when compared with HAS-BLED score, ORBIT score labelled most patients as “low risk” making them vulnerable to the complications which showed consistent poorer calibrations<sup>[8]</sup>.

A study conducted by Gulf – SAFE registry states that patients with asymptomatic AF constitute a harmful entity with worse outcomes compared with symptomatic AF. As there is no alarming or warning signs to take prompt action which gives it an unfavourable prognosis<sup>[4]</sup>. There are studies that concluded that patients with asymptomatic AF carry lower risk of adverse outcomes<sup>[7]</sup>. At the same time there are studies like AFFIRM, that show no difference in outcomes of Asymptomatic Vs Symptomatic AF. There is no consideration of Atypical AF<sup>[9]</sup>.

There was a study that compared Typical Vs Atypical Vs Asymptomatic AFs done in terms of the CHADSVASC scores and their outcomes. The conclusion showed significant differences between the three groups. Typical AF had favourable outcomes, CHADSVASC scores being lower. Atypical AF had higher CHADSVASC score on presentation and worse outcomes comparatively. The magnitude of difference was significant with hazard ratios in excess of 3 for cerebrovascular events such as stroke. This study also showed some difference between all causes of mortality and cardiovascular events in addition to cerebrovascular events<sup>[10]</sup>.

Some of the retrospective studies stipulated that patient with asymptomatic and symptomatic presentations shared similar prognosis and responded well to oral anticoagulant drugs sharing not only similar risk reduction of ischemic stroke and systemic emboli but also similar rate of increase in bleeding complications<sup>[11]</sup>.

#### 4. CURRENT SCREENING GUIDELINES

The disastrous effects of untreated AF irrespective of their symptomatology and presentation makes it necessary to adopt a few screening methods particularly to people who are at a high-risk category like those who are above 65 years old and patients with known AF but are undertreated. The methods should be readily accessible, cost-effective, patient compliant and non-invasive. Pulse palpation method is a readily accessible and reliable method as shown in SAFE (Screening for Atrial Fibrillation in Elderly) study<sup>[12]</sup>.

However, few newer guidelines also recommend looking at the ECG rhythm strip as an alternative to pulse palpation making it especially necessary in patients up to 72hrs post TIA or Stroke. Also, there can be 2 weeks of twice daily intermittent recordings that can be done to patients who are more than 75yrs old and those who have obvious suspicion for developing AF<sup>[13]</sup>. Although the American College of Cardiology/American Heart Association/Heart Rhythm Society guidelines makes no comment regarding the screening for AF even in high-risk cases<sup>[14]</sup>.

## 5. CURRENT MANAGEMENT STRATEGIES

Despite the progress in the diagnosis and treatment of asymptomatic atrial fibrillation (AAF), several challenges still persist. The first challenge is the lack of understanding about the underlying mechanisms of AAF<sup>(23)</sup>, which requires further research to improve diagnostic and treatment strategies. The second challenge is the absence of a standardized definition of AAF, making it difficult to compare results from different studies and accurately determine its prevalence. Finally, there is a need for large-scale clinical trials to assess the safety and efficacy of treatments for AAF.

Studies like AFFIRM ((Atrial Fibrillation Follow-up Investigation of Rhythm Management) states that asymptomatic patients have higher risk of cerebrovascular disease than symptomatic patients but lower incidence for coronary artery disease. They found statistically no significant differences in terms of morbidity and mortality between these two groups<sup>[9]</sup>. Hence patients with AF should be treated irrespective of their presence or absence of their symptoms to minimise future disabilities and death<sup>[15]</sup>.

Such trials will provide valuable information for managing this subtype of AF and developing guidelines for treatment. The management however starts with addressing the modifiable risk factors like HTN, Smoking, Obesity, Sedentary lifestyle. Incorporating a strict balanced and healthy diet along with regular exercises. Added to these above change modifications comes the pharmacologic preventive strategies for stroke prophylaxis which includes OAC's. Thromboprophylaxis can be obtained with vitamin K antagonists (VKA, eg, warfarin) or a non-VKA oral anticoagulant (NOAC). The risk of bleeding becomes the key barrier for optimal anticoagulation in many patients which needs to be looked after<sup>[16]</sup>.

Currently, the CHADVASC score is used to guide decisions on the management of new-onset AF based on stroke evaluation, and the HAS-BLED score is used to evaluate 1-year bleeding risk. However, more studies are needed to determine how AF symptoms influence outcomes from different perspectives.

## 6. CONCLUSION

In conclusion, AAF is a complex and poorly understood subtype of AF that requires a multi-disciplinary approach to diagnose and treat. Despite the challenges, early diagnosis and treatment of AAF can prevent complications and improve patient outcomes. Further research is needed to better understand the mechanisms underlying AAF and to develop improved diagnostic and treatment strategies. This will require a concerted effort from clinicians, basic scientists, and industry to develop new technologies and treatments for this challenging disease.

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