

Prevalence of Chronic Kidney Disease in Atrial Fibrillation Patients and its Relationship with CHA2DS2-VASc Score



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Introduction

- Chronic kidney disease (CKD) is a common comorbidity in patients with atrial fibrillation (AF), increasing the risk of adverse cardiovascular outcomes. Understanding the prevalence of CKD in AF patients is essential for improving clinical care.
- The CHA2DS2-VASc (congestive heart failure, hypertension, age ≥ 75 years, diabetes, prior stroke, vascular disease, age 65–74 years, and sex) score was originally formulated to predict thromboembolic risk in patients with nonvalvular AF.

Method

- AF patients who attended Lek Yuen General Outpatient Department (GOPD) between September 2024 and February 2025 were identified from the Clinical Data Analysis and Reporting System (CDARS). Clinical and laboratory data from January 2023 to February 2025 were analyzed. A cross-sectional analysis was conducted in 419 AF patients.
- CKD was defined as an eGFR < 60 mL/min/1.73 m².
- CHA2DS2-VASc score were categorized into low risk (0-2), medium risk (3-4), and high risk (5-9).
- Descriptive statistics were used to calculate CKD prevalence, and association between CKD and CHA2DS2-VASc score was assessed using Chi-square tests.

Results

- Among 419 AF patients (mean age 77.1 ± 9.3 years, 45.6% female, mean BMI 25.4 ± 4.3 kg/m²), comorbidities included congestive heart failure (7.6%), hypertension (83.1%), Type 2 diabetes (37.9%), prior stroke (14.8%) and ischemic heart disease (10.0%).
- CKD was present in 33.4% (n = 140) in AF patients.** CKD prevalence increased significantly with higher CHA2DS2-VASc scores: 18.6% for low risk (score 0-2), 29.9% for medium risk(score 3-4),and 51.7% for high risk(scores 5-9) (P<0.001).

Figure 1. Comorbidities of patients with AF

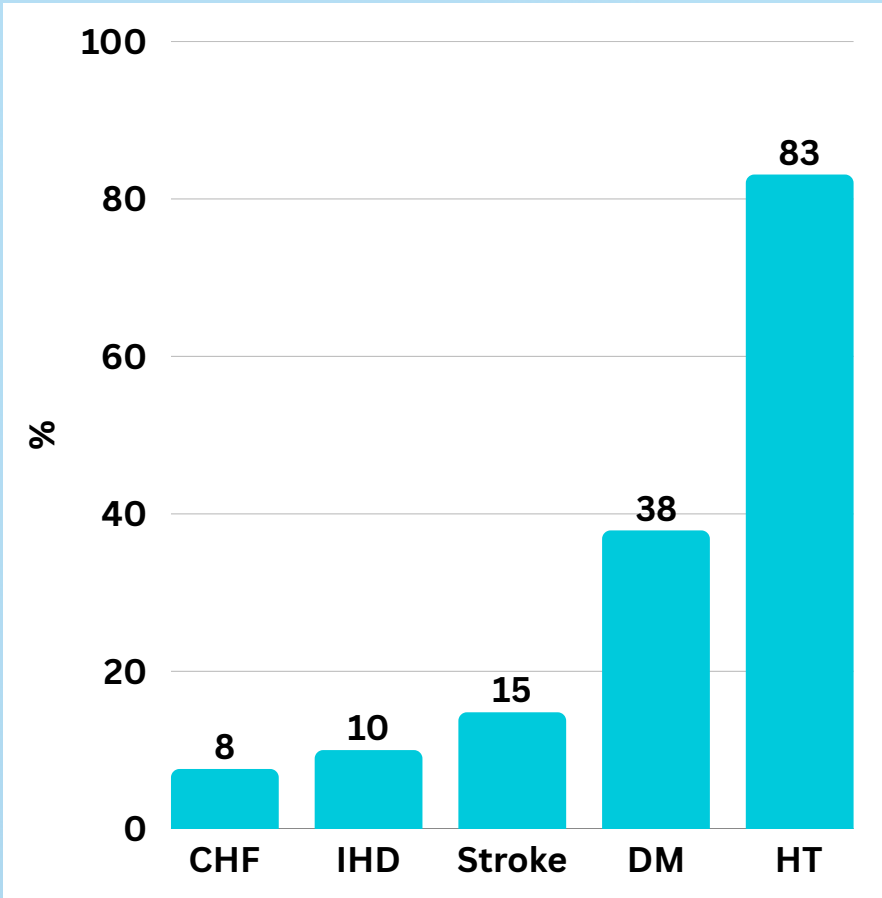


Table 1. Prevalence of CKD in AF Patients and its Relationship with CHA2DS2-VASc Score

	CHA2DS2-VASc score category			P value ^a
	low risk score (0-2)	medium risk score (3-4)	high risk score (5-9)	
no CKD (eGFR > 60 mL/min/1.73 m²) n=279	79	143	57	<0.001
% within risk score category	81.4%	70.1%	48.3%	
CKD (eGFR < 60 mL/min/1.73 m²) n=140	18	61	61	<0.001
% within risk score category	18.6%	29.9%	51.7%	
Total n=419	97	204	118	

^a categorical variables were compared between study groups using the chi-square test.

Conclusion

- CKD is highly prevalent in AF patients, with a higher CHA2DS2-VASc score significantly associated with increased CKD prevalence.
- Regular CKD screening in AF patients, particularly those with high CHA2DS2-VASc score, may improve clinical outcomes.