Title: Frequency of Undiagnosed Atrial Fibrillation in Patients presenting with Acute Ischemic Cerebrovascular Stroke

Category: Prevention

Abstract

Introduction: Acute ischemic Cerebrovascular stroke (CVS) can be the first clinical manifestation of atrial fibrillation (AF), that is why large-scale screening programs for AF are currently implemented especially in individuals more than or equal 65 years old. Yet, to date, cost-effectiveness data have relied on assumptions of stroke rates observed in patients with established AF, while the true incidence rates of undiagnosed AF presenting as a stroke remain unknown.

Purpose: To estimate the incidence of patients with no history of AF who are presented with acute ischemic CVS and are found to be in AF at the time of presentation or developed atrial fibrillation during the hospital stay.

Methods: A retrospective analysis of all patients admitted with acute CVS to a tertiary care stroke specialized center in the period from 01/01/2014 till 31/12/2017.

Ischemic CVS is confirmed by either Multislice computed tomography (MSCT) or Magnetic resonance imaging (MRI) of the brain.

AF is documented by electrocardiography (ECG) that is made at admission or during hospital stay.

Patients with history of AF on rate or rhythm-control therapy were excluded from the study.

Results: Of the 3299 patients admitted by acute ischemic CVS, 707 (21.43%) patients had history of AF and they were on medical rate or rhythm control therapy and thus were excluded from the study.

Of the remaining 2592 patients eligible for the study, 1666 (64.27%) were males with a mean age of 56.06 years (±16.01).

Regarding the ECG, 2313 (89.24%) patients were in sinus rhythm and other non-AF rhythms and 211 (8.14%) patients presented with AF rhythm and 68 (2.62 %) patients developed AF during their hospital stay with a cumulative incidence of (10.76%).

Conclusion: The incidence of undiagnosed atrial fibrillation in patients presented with acute cerebrovascular stroke is significantly high. Implementation of good screening programs can significantly reduce the risk of disabilities and morbidities.

Table 1: Baseline demographic, laboratory and ECG data.

Total Eligible		n = 2592
Age (years)		56.06 (±16.01)
Sex (males)		1666 (64.27%)
Risk Factors	Hypertension	1849 (71.33%)
	Diabetes Mellitus	925 (35.69%)
	Smoking	1445 (55.75%)
	Coronary artery disease	377 (14.54%)
	Chronic kidney disease	177 (6.83%)
	Peripheral arterial disease	115 (4.44%)
	Thrombophilia	32 (1.23%)
Laboratory data	Hemoglobin (g/dl)	11.13 (±1.78)
	White cell count (109 /l)	8.1 (±2.13)
	Platelet count (103 /l)	250 (±43)
	Creatinine (mg/dl)	1 (±0.22)
	INR	1.03 (±0.1)
ECG	Non-AF	2313 (89.24%)
	AF on admission	211 (8.14%)
	AF in hospital	68 (2.62 %)
	Total AF	279 (10.76%)

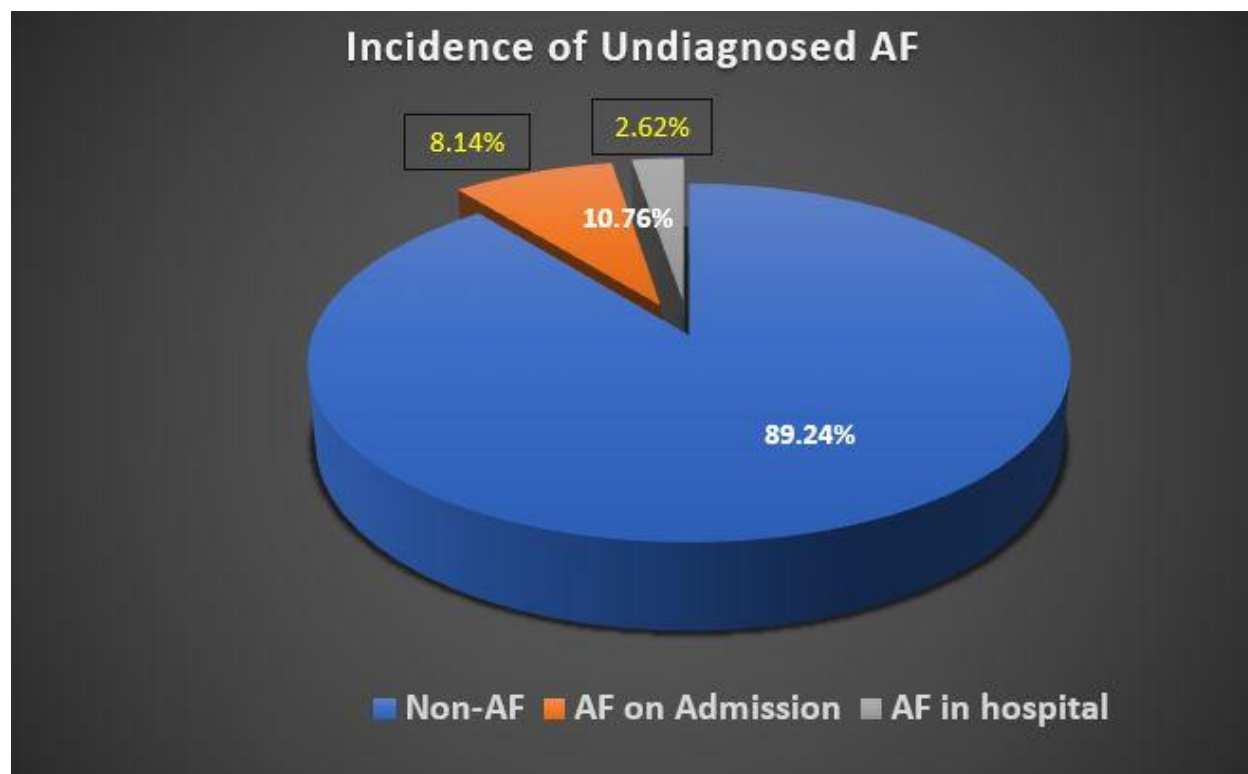Data is shown in numbers (%) or numbers (± standard deviation)

Figure 1. Incidence of undiagnosed AF in acute ischemic CVS patients