



# Atrial Fibrillation in Geriatric Patient at Cardiology Department of General Referral Hospital to Niamey (Niger)

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## Abstract

Background. Atrial fibrillation (AF) is irregular and very rapid electrical activity in the heart atrium who is the most common arrhythmia in people aged 65 and over. The objective was to determine the clinical, paraclinical and etiological sociodemographic aspects of AF in patients aged 65 and over in the cardiology department of the HGR at Niamey. Methodology. It is a prospective cross-sectional study in the cardiology department of the general referral hospital at Niamey for 3 months, involving all adult patients aged 65 and over. Results a total of 98 patients admitted, 21 were aged 65 and over and 12 patients had AF with a median age of 70 years [65-89 years], a men predominance in 7/12 cases, retired in 7 /12 cases and married in 7/12 cases. The risk factors were physical inactivity (10/12) and hypertension (8/12) while pneumopathy (45%) and treatment discontinuation (45%) were the comorbidities found. the frequent mode of admission was dyspnea at NYHA stage III and lower limb edema in 5/12 cases, dyspnea stage III in 3/12 cases and chest pain in 2/12 cases. The median CHAD2 VASC 2 and HAS BLED scores were 3[2-5] and 2[1-4], respectively.

Cardiomyopathy were dilated in 42% frequently ischemic, non-dilated in the same proportion or associated causes and valvulopathy (aortic, mitral and tricuspid) in 16% of cases. Ultrasound showed two (2) cases of pericardial effusion, one (1) frequent intracavitary thrombus. The main complications were stroke and heart failure. Conclusion. AF is the main arrhythmia in geriatrics revealed by comorbidities likes pneumonia and in context of cardiovascular risk factors on the ground of underlying heart disease with a high embolic risk requiring early diagnosis and multidisciplinary management.

**Keywords:** FA; Geriatrics; Risk factors; Complications; Niamey.

## Introduction

Atrial fibrillation (AF) is an irregular and very rapid electrical activity of the atria constituting the most common arrhythmia in elderly aged 65 and over representing 15 to 20% [1]. This age

group is characterized by the presence of increasing comorbidities with age, sometimes responsible for an atypical clinical sign [2]. AF is associated with an increased risk of morbidity and mortality such as stroke, heart failure [3-4]. These cardiovascular and

metabolic conditions are born of the epidemiological transition on the one hand associated with the persistence of bacterial infections linked to beta hemolytic streptococci responsible for rheumatic valvulopathy on the other hand are the causes of the development of AF compared to the occurrence with the age in sub-Saharan Africa [3-6]. The objective was to determine the clinical, paraclinical and etiological sociodemographic aspects of AF in elderly aged 65 and over in the cardiology department of HGR in Niamey.

## Methodology

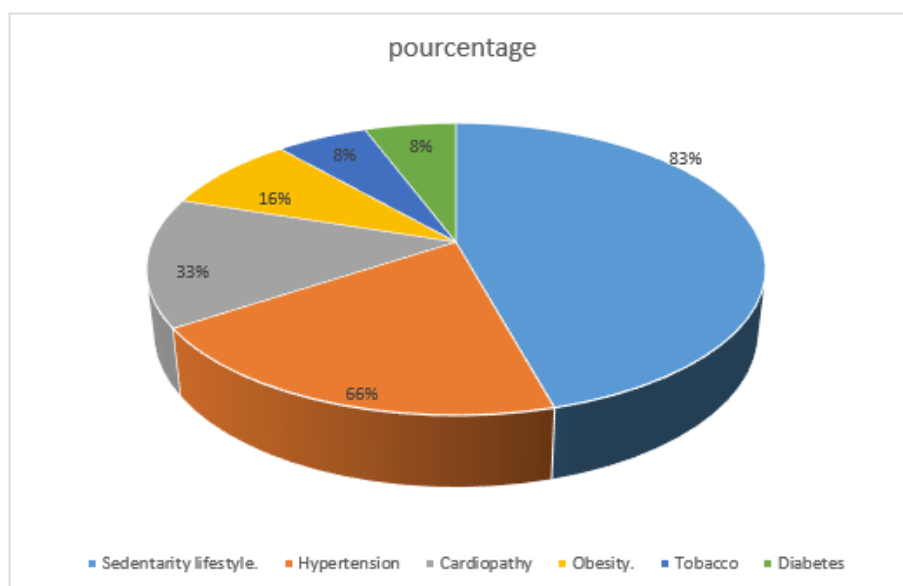
This is a prospective cross-sectional study lasting three (3) months in the cardiology department of the General Reference Hospital of Niamey concerning patients aged 65 or over admitted for cardiovascular signs. Geriatric syndromes were assessed using scores. Cardiovascular explorations were carried out in the cardiology department by junior cardiologists confirmed by the seniors of the same department. The examinations were: Electrocardiogram (ECG), Cardiac Doppler ultrasound, Binding Natriuretic Peptid (BNP) assay.

## Results

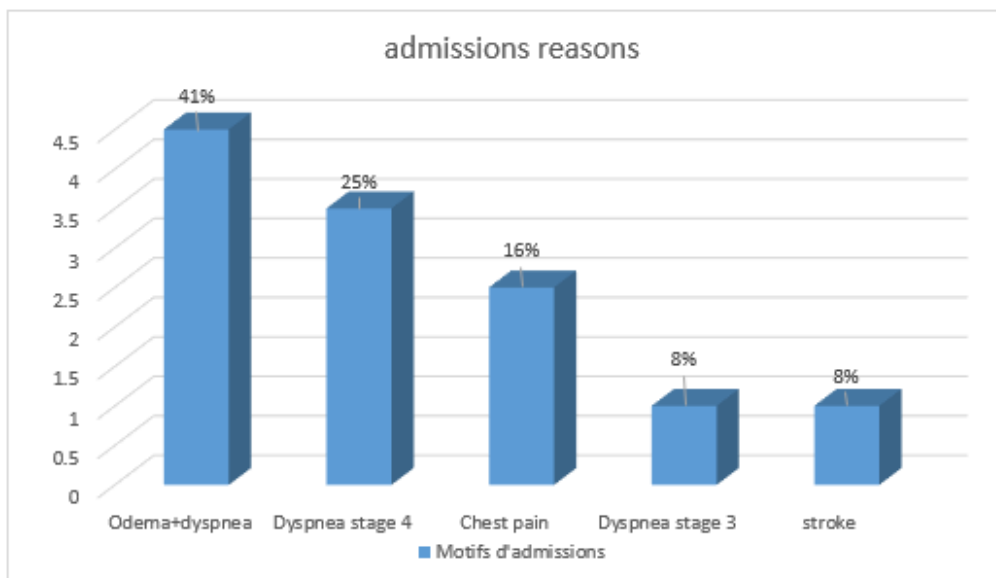
### Aspects sociodémographiques des patients ages avec FA Table [1].

**Table 1:** Sociodemographic aspects of elderly patients with FA.

Socio démographics aspects	n= effectif	Percentage %
Total patients	12	100%
Sex: Men/Women	5/7	42%/58%
Middle age	70 years [65-89]	
Function: retire/household/farmer/trader	7/3/1/1	58%/25%/8,5%/8,5%
Marital status: Married/widowers/ single	07-03-02	58%/25%/17%



**Figure 1:** cardiovascular risk factors. Frequent cardiovascular risk factors of FA were: la sédentary life style (83%) and Hypertension (66%).



**Figure 2:** admissions reasons of elderly patients. Dyspnae and odemae of lower limbs were frequents reasons of elderly admission.

The middle age was 70 years with a major case of married retiree 2.2 Associated risk factors.

#### Associated risk factors Figure [1].

#### Comorbidity

The comorbidity factor associated of FA were: pneumonia (45%), stop treatment (45%) and anemia (10%).

#### Admission complaints Figure [2].

#### Biologics aspects. hemorrhagic and embolic risk

The median CHAD2 VASC 2 embolic risk score was 3[2-5] while that of the HAS BLED hemorrhagic risk was 2[1-4].

### Socio-demographics, clinics and imagery aspects of elderly FA patient by etiology.

#### Sociodemography and etiology factors

The etiologies frequently found on echocardiography are dilated cardiomyopathies in 5/12 cases including (2 ischemic, 2 mixed and 1 unknown) more common in the 65-70 age group. Non-dilated cardiomyopathies were also found in 5/12 cases including (2 ischemic, 2 hypertensive and 1 mixed) frequent in the 65-70 age group.

The valvulopathies found were aortic insufficiency (1 case) and mitral insufficiency more tricuspid (1 case) without predominance without preponderance of sex and age. The ventricular ejection fraction was average (40-50%) in 7/12 cases, altered in 5/12 cases and concerns dilated, non-dilated cardiomyopathy and valvulopathy respectively in 5/12 cases, 5/12 and 2/12 cases.

#### Associated ultrasound Abnormalities

These are the pericardial effusion found in one (1) case of DMC and three (3) thrombi both in DMC and non-dilated and one (1) intraventricular septal aneurysm in aortic insufficiency. Two (2) cases of minimal aortic and tricuspid insufficiency were found in the non-dilated cardiomyopathies.

#### Embolic and bleeding risk scores

The median CHADS VASC 2 score was 3 [2-5] preponderant in dilated and non-dilated cardiomyopathies with a score of 5 respectively. The median HAS BLED hemorrhagic risk was 2[1-4] and preponderant in dilated cardiomyopathies with at 5 score.

#### Discussion

The hospital prevalence of patient aged 65 and over in cardiology was 21/98 (21%), that of FA was 12% and the prevalence in geriatrics was (12/21 = 57%). The average age of our study patient was 70 years [60-89 years]. In the general population over the age of 70 in Tanzania, FA was 0.7% and the hospital prevalence in the cardiology department was 7.8% with an average age of 68 years characterized by women preponderance and a trend increasing with age [7-8]. In the United Kingdom, Majjed et al found in the age group 70-74 years a prevalence of FA was 4.6% in men and 3.3% in women and could reach more than 10% in women and men over 85 years old [9]. In Europe the prevalence is higher and varied from 6.9 %, 5.4% and 10% beyond 85 years respectively for the age group of 70-74 years, in men and women and both sexes over 85 years [10].

In African American subjects in the USA, Go As and coll found the same proportions as Majjed and coll but much less in the age

group of 70-79 years and over 80 years in black Americans [11]. The women prevalence of FA and the increase with age was reported in sub-Saharan Africa by some authors without generalizing the fact because of the limited number of studies [12-14]. The size of the different samples, the different means of diagnosis, in particular ischemia, could be the cause of this disparity.

Frequent risk factors in our study were hypertension (66%), obesity (16%) and diabetes (8%). In the study of Dewhurst MJ and coll in Tanzania, hypertension defined by a value of 140/90 mm Hg was found in 70% of cases [7] and corroborates the review of the Sub-Saharan literature which reports a prevalence of 10 to 70% in the general population [15-16]. Diabetes was found in 8% of cases in our study, while its prevalence varies from 2.9 to 33% respectively in the study of Diallo in Mali [16] and Shavadia in Kenya [17]. The prevalence of obesity with a body mass index over or equal to 25 ranged from 5.5 to 48.1% in sub-Saharan Africa [3]. In our study, a sedentary lifestyle (83%) and smoking (8%) had been reported and could lead to an increased risk of developing FA.

The etiological factors in our study were heart disease (33%) reported at the interview, cardiomyopathy (83%) frequently ischemic and valvulopathy (16%). Underlying cardiomyopathies were reported in 20% and valvular heart disease reported in 12 to 44.4% in the general population of Sub-Saharan Africa [3,18]. Myocardial ischemia is the mechanism frequently reported in the literature and ranged from 2.7 to 22.9% in Sub Saharan general [19,20]. The complications of FA in our study were, heart failure (41.6%), stroke (8%) and three (3) cases of intracavitary thrombus while in sub-Saharan Africa heart failure was reported in 60%, in old and recent stroke (2.4 to 33.8%) and intracavitary thrombus in 15 to 30% of cases [3].

## Conclusion

FA in the elderly patient is associated with comorbidities such as pneumonia on the grounds of hypertension, diabetes or underlying heart disease which may be complicated by ischemic visceral attack or heart failure.

## Acknowledgement

None.

## Conflict of Interest

None.

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