

# PROFILE OF ATRIAL FIBRILATION IN PROF. R.D. KANDOU HOSPITAL MANADO FROM SEPTEMBER 2012 – FEBRUARY 2013

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**Abstrak:** Fibrilasi atrial merupakan gangguan irama jantung menetap yang paling sering dijumpai di praktek sehari-hari, ditandai oleh adanya aktivasi atrium yang tidak terorganisasi dan kontraksi atrium dan ventrikel yang tidak terkoodinasi. Meskipun banyak laporan mengenai fibrilasi atrial di Indonesia, tetapi hal ini belum pernah dilaporkan di Sulawesi Utara. Penelitian ini bertujuan untuk mendapatkan profil fibrilasi atrial di Manado. Data diambil dari pasien fibrilasi atrial di Bagian Jantung dan Pembuluh Darah, Prof R D Kandou, Manado, sejak September 2012-Februari 2013. Variabel yang diamati ialah jenis kelamin, usia, penyakit penyerta, ekokardiografi, dan terapi. Sebanyak 84 pasien diikutsertakan dalam penelitian ini, terdiri dari 42 laki-laki dan 42 perempuan dengan usia 21-84 tahun dengan rincian 53 pasien berusia  $\geq 60$  tahun dan 30 pasien  $< 60$  tahun. Pada 59 pasien yang dilakukan ekokardiografi, 39 pasien (66,1%) mempunyai fraksi ejeksi  $\geq 55\%$ ; dan 20 pasien (33,9%)  $< 55\%$  (rerata 55,8%). Pembesaran atrium kiri ditemukan pada 33 pasien (55,9%) dan trombus pada 13 pasien (22%). Penyakit penyerta yang ditemukan ialah: hipertensi pada 35 pasien (41,7%); gagal jantung 40 pasien (40,76%); penyakit jantung koroner 20 pasien (23,8%); penyakit jantung katub 21 pasien (25%); penyakit paru 6 pasien (7%); hipertiroid 5 pasien (6%); dan tanpa penyakit penyerta 1 pasien (1,2%). Pada 70 pasien (83,3%) diberikan terapi bisoprolol; 2 pasien (2,4%) digoksin; 3 pasien (3,5%) amiodaron; 7 pasien (8,4%) bisoprolol dan digoksin; dan 2 (2,4%) bisoprolol dan amiodaron. Obat antikoagulan oral diberikan pada 28 pasien (33,03%), dan aspirin pada 40 pasien (47,6%). Stroke ditemukan pada 4 pasien (4,8%); satu orang diantaranya meninggal akibat *stroke*. **Simpulan:** Fibrilasi atrial lebih sering ditemukan pada usia lanjut. Gagal jantung dan hipertensi merupakan penyakit penyerta yang tersering, sehingga perlu diwaspadai. Bisoprolol merupakan pilihan terapi yang tersering diberikan, dan angka komplikasi dan kematiannya rendah.

**Kata kunci:** fibrilasi atrial, penyakit penyerta, terapi.

**Abstract:** Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia encountered in clinical practice characterized by disorganized atrial activation and uncoordinated contraction of the atria and ventricle. Although there are many reports regarding the profile of atrial fibrillation (AF) in Indonesia, none have been published in North Sulawesi. This study aimed to provide epidemiological data regarding atrial fibrillation profile in Manado. We reviewed medical records of outpatients diagnosed with AF in the Department of Cardiology and Vascular Medicine, Prof. Dr. R.D. Kandou Hospital, Manado, from September 2012-February 2013. Relevant variables such as gender, age, co-morbid, echocardiography, and medical therapy were documented. The results showed that a total of 84 patients with AF were enrolled in the study. There were 42 males (50%) and 42 females (50%) with age ranges from 21 to 84 years (mean 60.74 years), of these 53 patients (63%) were  $\geq 60$  years and 31 patients (37%)  $< 60$  years. From

the total 84 patients, 59 patients underwent echocardiography examinations: 39 patients (66.1%) had ejection fraction (EF)  $\geq 55\%$ ; and 20 patients (33.9%) had EF  $< 55\%$  (mean 55.8%). Left atrial enlargement was found in 33 patients (55.9%) and thrombus was found in 13 patients (22%). Besides suffering from AF, 35 patients (41.7%) had hypertension, 40 (40.76%) had congestive heart failure, 20 (23.8%) had coronary artery disease, 21 (25%) had valvular heart diseases, 6 (7%) had pulmonary diseases, 5 (6%) had hyperthyroidism, and 1 (1.2%) had no comorbid. Seventy patients (83.3%) were treated with bisoprolol, 2 (2.4%) with digoxin, 3 (3.5%) with amiodarone, 7 (8.4%) with bisoprolol and digoxin, and 2 (2.4%) with bisoprolol and amiodarone. Oral anticoagulant was used in 28 patients (33.3%), and aspirin in 40 patients (47.6%). Strokes were found in four patients (4.8%); one died due to stroke. **Conclusion:** The prevalence of AF was higher in the elderly. Congestive heart failure and hypertension were the most common comorbidities found, thus, greater awareness is needed. Bisoprolol was used as the highest proportion of treatment in AF patients, and the complication and mortality rates were low.

**Keywords:** atrial fibrillation, comorbidities, therapy.

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia encountered in clinical practice which requires treatment. AF is characterized by disorganized atrial activation and uncoordinated contraction of the atria and ventricles. ECG demonstrates rapid fibrillatory waves with changes in morphology and ventricular rhythm that is irregularly irregular.<sup>1,2</sup> This is clinically identified as irregularly irregular pulse with rates varying from normal to 200 beats per minute and a pulse deficit of  $> 10$  beats. The occurrence of AF should be suspected when the ECG shows ventricular complexities with an irregular and no obvious P wave. AF has been classified by the American Heart Association, the American College of Cardiology, and the European Society of Cardiology into: first detected episode, recurrent (two or more episodes), paroxysmal (terminates within 7 days), persistent (persists for more than 7 days), and permanent (sustained for more than one year).<sup>1,3,4</sup>

AF is common in patients with structural heart diseases. While in developing countries rheumatic valvular disease remains a major etiological factor for AF, the spectrum in Western populations has shifted to hypertension, atherosclerotic heart disease, congestive heart failure, valvular heart disease (mainly mitral stenosis), and diabetes mellitus as the most common risk factors for the development and sustenance of AF.<sup>5</sup>

Based on the sub-analysis of Framingham data, Lloyd Jones et al.<sup>6</sup>

highlighted the fact that AF posed a major public health burden as the lifetime risk of developing AF from age 40 onwards is approximately one in four for both males and females, and one in six even in the absence of congestive heart failure or myocardial infarction.<sup>6</sup> Based solely on the aging of the population, the prevalence of AF in the United States had been projected to increase from  $\pm 2$  to 5 million in 2000 to  $\pm 6$  to 12 million in 2050, with estimates reaching almost 16 million if the increase in age-adjusted AF incidence continues.<sup>7,8</sup>

Atrial fibrillation, the commonest clinical arrhythmia increasing in incidence and prevalence, is associated with substantial morbidity and mortality. Cerebrovascular complications are further important causes of functional limitation of such patients.<sup>9,10</sup> This study was aimed to provide the epidemiological data regarding profile of atrial fibrillation since there have been none published in North Sulawesi.

## METHODS

This observational based study was carried out in the Department of Cardiology and Vascular Medicine, Prof. Dr. R.D. Kandou Hospital, Manado from September 2012 - February 2013. We reviewed medical records of outpatients diagnosed with AF (having clinical and electrocardiographic evidence of AF).

Relevant variables such as gender, age,

clinical presentation, echocardiography, and medical therapy were documented for further evaluation. Results were presented using percentages.

## RESULTS

A total of 84 patients with AF were included in the study. There were 42 males (50%) and 42 females (50%) with age ranges from 21 to 84 years (mean 60.74 years). Of the 84 patients, 53 patients  $\geq 60$  years (63%) and 31 patients  $< 60$  years (37%) (Table 1).

**Tabel 1.** Gender and age of patients

Characteristics	Number of patients (%)
<b>Sex</b>	
Male	42 (50%)
Female	42 (50%)
<b>Age (years)</b>	
20-39	8 (9.6%)
40-59	23 (27.4%)
$\geq 60$	53 (63%)

From a total of 84 patients, 59 patients underwent echocardiography examinations. Of these, 39 patients had ejection fraction (EF)  $\geq 55\%$  (66.1%) and 20 patients had EF  $< 55\%$  (33.9%) with a mean of 55.8%. Left atrial enlargement was found in 33 patients (55.9%) and thrombus was found in 13 patients (22%) (Table 2).

**Tabel 2.** Echocardiography observations of the patients

Characteristic	Number of patients (%)
<b>Ejection Fraction (EF)</b>	
EF $\geq 55\%$	39 (66.1%)
EF $< 55\%$	20 (33.9%)
<b>Left Atrial Enlargement (LAE)</b>	
LAE +	33 (55.9%)
LAE -	26 (44.1%)
<b>Left Atrial Thrombus</b>	
Thrombus +	13 (22%)
Thrombus -	46 (78%)

From all AF patients, there were 35 patients who had hypertension (41.7%), 40 patients had congestive heart failure (47.6%), 20 patients had coronary artery disease (23.8%), 21 patients had valvular heart diseases (25%), 6 patients had pulmonary disease (7%), 5 patients had hyperthyroidism (6%), and 1 patient had no co-morbid (AF alone) (1.2%) from all of AF patients (Table 3).

**Tabel 3.** Clinical presentation of patients with AF

Clinical presentation	Patients (%)
Hypertension	35 (41.7%)
CHF	40 (47.6%)
CAD	20 (23.8%)
VHD	21 (25%)
Pulmonary disease	6 (7%)
Hyperthyroidism	5 (6%)
AF alone	1 (1.2%)

Seventy patients were treated with bisoprolol (83.3%), 2 patients with digoxin (2.4%), 3 patients with amiodarone (3.5%), 7 patients with bisoprolol and digoxin (8.4%), and 2 patients with bisoprolol and amiodarone (24%) (Table 4).

**Tabel 4.** Treatment in patients with AF

Treatment	Patients (%)
Bisoprolol	70 (83.3%)
Digoxin	2 (2.4%)
Amiodarone	3 (3.5%)
Bisoprolol + Digoxin	7 (8.4%)
Bisoprolol + Amiodarone	2 (2.4%)

Oral anticoagulants (dabigatran or heparin) were used in 28 patients (33.3%), and aspirin in 40 patients (47.6%). In complications, stroke were found in 4 patients (4.8%), in which 1 of them died because of the complication (Table 5).

## DISCUSSION

A proportion of male and female patients

**Tabel 5.** Tromboembolism prevention

Treatment	Patients (%)
Aspirin	40 (47.6%)
Oral Anticoagulant	28 (33.3%)

in this study was the same (50% vs 50%). Similar observations were made by other studies.<sup>11,12</sup> The age distribution of patients in this study showed a mean age of 60.74. Most of the patients belonged to the group  $\geq 60$  years which was similar with other studies showing a higher prevalence of AF in the elderly.<sup>13,14</sup>

In Western populations the most common risk factors for the development of AF have shifted from rheumatic valvular disease to hypertension, coronary heart disease, and congestive heart failure. In the Framingham Study, heart failure was the most powerful predictor of AF, with more than a five-fold relative risk.<sup>15</sup> Our study found that congestive heart failure and hypertension were the most common clinical presentations in AF patients.

Data from the ALPHA study registry showed that AF was more prevalent among patients with preserved ejection fraction than those with reduced ejection fraction.<sup>16</sup> In our study, 39 patients (66.1%) had preserved ejection fraction, and 20 patients (33.9%) had reduced ejection fraction.

In the RACE (RATE Control versus Electrical cardioversion for persistent AF) study, the primary end point was a composite of death from cardiovascular causes, heart failure, and thrombo-embolic complications. With a mean follow-up of 2.3 years, the primary end point occurred in 44 of the 256 rate control patients (17.2%), and 60 of the 266 rhythm control patients (22.6%).<sup>17</sup> In our study, bisoprolol (rate control) had the highest proportion of treatment in AF patients.

## CONCLUSION

The prevalence of AF was higher in the elderly, and there was no different in

prevalence between both genders.

Congestive heart failure and hypertension were the most common clinical presentation, found in our study, thus, greater awareness is needed.

Bisoprolol (rate control) had the highest proportion of treatment in AF patients, and the complications and mortality rate was low.

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