Study of Clinical Profile of Atrial Fibrillation.

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ABSTRACT

Background: Atrial fibrillation is one of the commonest cardiac arrhythmia which, a physician comes across during his medical practice and a student during the course of his study in medical works. The incidence among adult population is about 0.4% and reaches up to 5% in people over the age of 69 years. It is found in association with various types of diseases, cardiac as well as extracardiac. In spite of these extensive studies, the fundamental mechanism, responsible for genesis of atrial fibrillation is still not clear. The recent advances made in electrophysiology of heart and the advance made in the field of Bio-medical engineering led to the evolution of newer instruments which have made the etiology and diagnosis of Atrial fibrillation simpler than what it used to be, a decade or two earlier. Echocardiography, in particular, is extremely useful in diagnosis and assessing the prognosis and choosing of treatment modalities of Atrial Fibrillation. The advent of newer antiarrhythmic drugs and greater understanding of their mechanisms of action and side effects have revolutionized the modalities of treatment of Atrial Fibrillation. In this study an attempt is made to find out the etiology of Atrial fibrillation, clinical profile and the complications are evaluated and the response to standard available treatment is evaluated. **Material and methods:** The present study reports 60 patients of atrial fibrillation who attended IMAGE HOSPITAL, Hyderabad from May 2010 to May 2012. Patient was selected as per inclusion and exclusion criteria. Diagnosis was made by clinical evaluation, blood investigations, ECG and echocardiography. Treatment given to all patients of atrial fibrillation was recorded and Patients were followed up after 2 months and 6 months. **Results:** The study group comprising 60 patients showed a female predominance between two sexes, 40 were females and 20 were males. The study group range from 17 years to 67 years, majority of the being form 51-60 years age group. Among the 60 patients 36 patients had Rheumatic heart disease, 11 patients had cardiomyopathy of idiopathic origin, 3 patients has ischemic heart disease, 2 patients had hypertension, 1 patient had mitral valve prolapsed, 1 patient had myeloma, 3 patients had lone AF, 1 patient had PPAH and 1 patient had thyrotoxicosis. Their main complaints were palpitations, breathlessness and cough with expectoration. Total no. of cases of valvular diseases: 37 (31.66%). Out of total cases of cardiomyopathy most common is dilated cardiomyopathy followed by restrictive cardiomyopathy and obliterative cardiomyopathy. Out of three patients 1 patient had Diabetes mellitus 1 patient had dilated LA 1 patient had LA clot. Out of three cases of thyromegaly only one case had thyrotoxicosis with dilated LA. **Conclusion:** From our study we concluded that atrial fibrillation is most common arrhythmia in medical wards with varied etiology, incidence ranges from 0.3% (< 55 years) to 3.5% after 55 years of age. The age of onset of atrial fibrillation is younger in our country when compared to age on set in western countries. Male to Female ratio is 1:2. The commonest cause of AF is Rheumatic heart disease, with mitral stenosis being the commonest valvular lesion. The most common complication of AF in the study is congestive heart failure. Incidence of stroke in AF in our study is 7%. Incidence of AF increases with increase in LA size and increasing LV dysfunction. LA size as measured by echocardiogram was consistently more in chronic permanent AF of prolonged duration. Prognosis of AF patients is better when AF is adequately rate controlled along with congestive heart failure treatment. Rate control and anticoagulation were hallmark in AF treatment. Recurrence rate will be very high in AF cases after sinus conversion. Though we achieved advancement in understanding AF pathophysiology and treatment, current response to treatment is unsatisfactory and even very far for reach to common man.

Keywords: Arrhythmia, Atrial Fibrillation

INTRODUCTION

The term arrhythmia implies a deviation beyond

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conventionally defined limits of the rate or regularity of the heartbeat or any disturbance in the normal sequence or activation.[1] Rhythm disturbances may be classified in relation to rate, site of origin, site of conduction delay or block.

Atrial fibrillation is one of the commonest cardiac arrhythmia which, a physician comes across during his medical practice and a student during the course of his study in medical works. The incidence among adult population is about 0.4% and reaches up to 5% in people over the age of 69 years.[2] This arrhythmia

which initiates or aggravates cardiac decompensation, itself perpetuated by cardiac decompensation, it is found in association with various types of diseases, cardiac as well as extracardiac and sometimes is seen to occur as a lone phenomenon. It is responsible for many complication both cardiac and extracardiac like heart failure, embolic phenomenon, pulmonary oedema etc., Atrial fibrillation is not only seen in medical wards, but is also seen in surgical wards, where a cardiac surgeon is confronted with, as a postoperative complication. In spite of extensive studies, the fundamental mechanism, responsible for genesis of atrial fibrillation is still not clear.

The recent advances made in electrophysiology of heart and the advance made in the field of Bio-medical engineering led to the evolution of newer instruments which have made the etiology and diagnosis of Atrial fibrillation simpler than what it used to be, a decade or two earlier3. Echocardiography, in particular, is extremely useful in diagnosis and assessing the prognosis and choosing of treatment modalities of Atrial Fibrillation depending on size of left atrium, specially so, in our country where Rheumatic heart disease is very much prevalent.

The advent of newer antiarrhythmic drugs and greater understanding of their mechanisms of action and side effects have revolutionized the modalities of treatment of Atrial Fibrillation. New and more effective drugs meant easier and more effective way of treating persistent or resistant atrial fibrillation, not amenable to usual antiarrhythmic drugs.[4,5] In this study an attempt is made to find out the incidence, etiology of atrial fibrillation, clinical profile, complications and radiological and electrocardiographic feature and the response to standard available treatment is evaluated.

MATERIALS AND METHODS

The present study includes 60 patients of atrial fibrillation who attended IMAGE HOSPITAL, Hyderabad from May 2010 to May 2012. Inclusion criteria include patients with age > 13 years, patients with AF of any variety and out patients & in patients in medicine & cardiology wards. Exclusion criteria included Age < 13 yrs. Diagnostic criteria used for diagnosis for AF cases include:

Clinical
1. Irregularly irregular pulse with pulse deficit > 10
2. Variable S1
   ECG
1. Variable R Interval
2. Absent P-waves
   Detailed physical examination of patients was done and recorded. Investigations done were total blood picture, renal function tests, RBS, ASO, Urine examination, Thyroid profile in relevant cases, lipid

profile in relevant cases. ECG Analysis were done with reference to Rhythm, Rate, QRS axis, ST – T Wave abnormalities, Chamber hypertrophy LVH noted by Rohmhilt – Estees Criteria, RVH noted by R/S>1, Conduction disturbances, Digitalis effect (reverse tick sign t wave abnormalities), Digitalis toxicity (PR interval prolongation bigemini rhythm ARS duration) and Conduction disturbances. Radiology evaluation was done after doing Chest X-Ray PA View and following were recorded: Cardiothoracic ratio, pulmonary venous hypertension, pulmonary arterial hypertension, Chamber enlargement. Through Echocardiography following were seen: 2- D echo, M Mode and Color Doppler flow study was done.

Emphasis was done on
   a. LA size
   b. LA clot
   c. Organic valvular disease
   d. Ejection fraction (55-85 normal)
   e. Fractional shortening (35-55)
   f. E.F slope
   g. Wall motion abnormalities
   h. Valve aperture size
   i. Septal defects and pericardial pathology

Investigations not done due to unavailability of equipment
- TEE
- Cardiac catheterization
- Angiography
- Radionuclide studies
- Phonocardiogram

Treatment given to all patients of atrial fibrillation was recorded

Patients were followed up after 2 months and 6 months.

RESULTS

Various data were collected from the study group comprising of 60 patients they are as follows:

The Clinical features of 60 patients with AF are summarized in the following tables:

SEX DISTRIBUTION: The study group comprising 60 patients showed a female predominance between two sexes, among 60 patients 40 were females and 20 were males

Sex	No Of Cases	Percentage
Male	20	33.33%
Female	40	66.67%
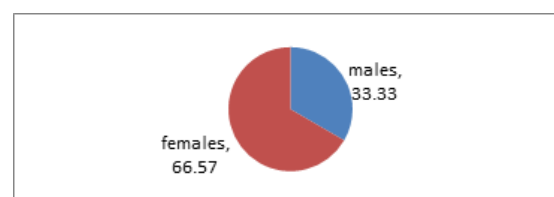
AGE: the study group range from 17 years to 67 years, majority of the being form 51-60 years age group

Age Group	11-20	21-30	31-40	41-50	51-60	61-70
No of cases	4	7	11	13	18	7
Percentage	6.66%	11.67%	18.33%	21.67%	30%	11.67%
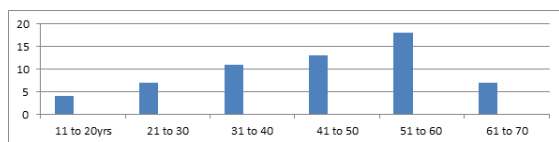
3. Aetiology

From etiological point of view an overwhelming number of patients had suffered from rheumatic heart disease. Among the 60 patients 36 patients had Rheumatic heart disease, 11 patients had cardiomyopathy of idiopathic origin, 3 patients has ischemic heart disease, 2 patients had hypertension, 1 patient had mitral valve prolapsed, 1 patient had myeloma, 3 patients had lone AF, 1 patient had PPAH and 1 patient had thyrotoxicosis.

Etiology	VHD	DCM	IHD	HTN	MVP	Myeloma	Lone AF	PPAH	Thyrotoxicosis
No of cases	37	11	3	2	1	1	3	1	1
Percentage	61.66%	18.33%	5%	3.33%	1.67%	1.67%	5%	1.67%	1.67%
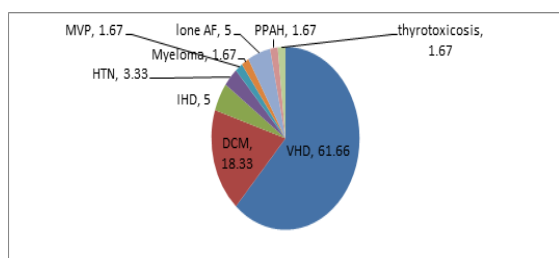
Symptoms: there main complaints were palpitations, breathlessness and cough with expectoration

Symptoms	No. Of Patients	Percentage
Breathlessness G II	24	40%
Breathlessness G III	10	16.67%
Breathlessness G IV	16	26.67%
Palpitation	44	73.33%
Syncope	2	3.33%
Chest pain	3	5%
Hemiparesis	5	8.33%
Altered sensorium	1	1.67%
Swelling of feet	20	33.33%
Cough with expectoration	16	26.67%
Diplopia	1	1.67%

Tremor	1	1.67%

Signs on clinical examination

Anemia	10pts	17%
Clubbing	24	40%
Anasarca	10	17%
Thyromegaly	03	5%
Marfanoid features	00	00%
Signs of acute Rheumatic fever	00	00%
Blood pressure (<90/70)	10	17%
Blood Pressure (>160/100)	4	6.67%
Raised JVP	36	60%
Tapping Apex	32	53.33%
Hyperdynamic Apex	03	5%
Heaving Apex	01	1.67%
Palpable first heart sound	32	53.33%
Parasternal heave	32	53.33%
Diastolic thrill in MA	16	27%
Loud variable first heart sound	33	55%
Soft muffled first heart sound	5	8.3%
Loud pulmonary component	26	43.33%
Gallop	5	13.33%
Middiastolic murmur	30	50%
Pansystolic murmur	10	17%
Early diastolic murmur in AA, NAA	5	8.33%
Ejection systolic murmur in AA	3	5%
Signs of PAH	37	61.67%
Functional TR murmur	24	40%
Pulmonary congestion signs	38	62%
Semiconscious state	3	5%
Aphasia	3 pts	5%
VIIth UMN palsy	3	5%
VIIth LMN palsy	1	1.67%
Abducent palsy	1	7%
Hemiplegia	5	7%
Tender hepatomegaly	24	40%
Pulsatile liver	10	17%
Splenomegaly	2	3.33%

Electrocardiographic Features

AF with fast ventricular rate	9 pts	15%
AF with controlled ventricular rate	47	78.33%
AF with slow ventricular rate	4	6.67%
AF with complete heart block	0	0%
Right ventricular hypertrophy	24	40%
Left ventricular hypertrophy	12	20%
Right axis deviation more than 110	29	48.33%
Left axis deviation more than 30	4	6.67%
ST-T Wave changes of ischemic origin	2	3.33%
Non specific ST-T wave changes	8	13.33%
Signs of digoxin effect	8	13.33%
Signs of digoxin toxicity	2 pts	3.33%
Fine atrial fibrillation	50	83.33%
Coarse atrial fibrillation	10	17%

Radiological Features

Cardiomegaly	42 pts	70%
CTR (50-59)	22	36367%
CTR (60-69)	12	20%
CTR (70-79)	8	18.33%
Shadow in shadow appearance	12	20%
Mitralisation of left heart border	16	27%

Cephalisation	12	20%
PAH	32	53.33%
Splaying of bronchus	12	20%
Aortic calcification	1	1.67%
COPD lung	2	3.33%
Pleural effusion	8	13.33%
Pneumonia	3	5%
Kerly lines	2	3.3%
Pulmonary oedema	9	15%

ECHO Cardiographic Features

Left atrial size < 3.5cm	10 pts	17%
3.5 to 4.5 cm	32	53.33%
4.5 to 6 cm	11	18%
More than 6cm	7	12%
Right ventricular enlargement	14	23%
Left ventricular enlargement	15	25%
E/F slope flattening	32	53.3%
Left atrial thrombus	12	20%
Mitral regurgitation	24	40%
Mitral stenosis	32	60.3%
Aortic regurgitation	6	10%
Aortic stenosis	3	5%
Tricuspid regurgitation	36	60%
Pericardial effusion	2	3.33%
Ejection fraction < 45	20	40%
Global hypokinesia	12	20%
Honeycomb appearance of myocardium	1	1.67%
Normal echo	3	5%
PAH	40	66.66%
Regional wall motion abnormality	4	6.66%
Others		
Papillary muscle necrosis	1	1.67%
Atrial septal aneurysm	1	1.67%

Data of Valvular Heart Disease

Etiology	No of cases	Percentage
CRHD	36	60%
Atherosclerotic AS AR	1	1.67%

Total no. of cases of valvular diseases: 37 (31.66%)
Analysis Of Cases Of CRHD

Parameter	No of cases	Percentage
MS	8	13.33%
MS + MR	20	33.33%
MITRAL + AORTIC VALVE DISEASE	8	13.33%
PAH	28	46.66%
CHF	20	33.33%
STROKE	5	8.33%
L A DILATD 3.5CM		
L A CLOT	8	13.33%
PULMOEDEMA	4	6.67%

Analysis of Cases of CRHD

Parameter	No Of Cases	Percentage
MS	8	13.33%
MS+MR	20	33.33%
MVD + AR	5	7%
MVD + AS	2	3.33%
MVD+AS +AR	1	1.67%
MITRAL SCORE < 8	10	16%
MITRAL SCORE > 8	26	42.9%
MITRAL VALVE SIZE 2.5-1.5	4	6.66%

1.5-1.0	24	40%
<1	8	13.33%
Infective endocarditic	0	0%

Analysis of Cardiomyopathy Cases

Parameter	No Of Cases	Percentage
DCM	8	13.33%
RCM	2	3.33%
OCM	1	1.67%
PVH	8	13.33%
CHF	5	8.33%
MR	9	15%
LA THROMBUS	2	3.33%
STROKE	0	0%
PULMONARY EDEMA	4	6.67%

Out of total cases of cardiomyopathy most common is dilated cardiomyopathy followed by restrictive cardiomyopathy and obliterative cardiomyopathy
Analysis of lone AF.

Parameter	No of cases	Percentage
Age < 50	1	1.67%
Age >50	2	3.33%
HTN	0	0
DM	1	1.67%
COPD	0	0
Normal ECHO	1	1.67%
LA thrombus	1	1.67%
Dilated LA	1	1.67%
Tachycardia induced cardiomyopathy	1	1.67%

Out of 3 patients, 1 patient had Diabetes mellitus, 1 had dilated LA and 1 patient had LA clot.
Analysis of AF with Thyroid Disease

Parameter	No Of Cases	Percentage
Thyromegaly	3	5%
Euthyroid (clinical)	2	3.33%
Thyrotoxicosis (Clinical)	1	1.67%
Raised T3, T4	1	1.67%
Low TSH	1	1.67%
Normal thyroid profile	2	3.33%
LA clot	0	0
Dilated LA > 3.5	1	1.67%

Out of 3 cases of thyromegaly only one case had thyrotoxicosis with dilated LA.
Analysis of IHD Cases

Parameter	No of cases	Percentage
Total	3	5%
Post MI	2	3.33%
Unstable angina	1	1.67%
MR	1	1.67%
PVH	2	3.33%
Pulmonary edema	1	1.67%
HTN	3	5%
LA thrombus	1	1.67%
DM	2	3.33%

Miscellaneous

Parameter	No Of Cases	Percentage
MVP	1	1.67%
PPAH	1	1.67%
Papillary muscle necrosis sec. To	1	1.67%

cyclophosphamide in myeloma		
Dilated LA/RA	1	1.67%
LA clot	0	0

Complications Of AF

Complication Of AF	No Of Cases	Percentage
CHF	32	53.33%
Hypotension	10	16.67%
Acute pulmonary edema	8	13.33
Stroke	5	8.33%
Cardiomyopathy	7	11.67%
Ortner's syndrome	0	0
Angina pectoris	0	0
Anxiety	10	16.67%
Death	3	5%

Types Of AF

Parameter	No Of Cases	Percentage
Paroxysmal Acute AF	12	20%
Persistent AF	18	30%
Chronic permanent AF	30	50%
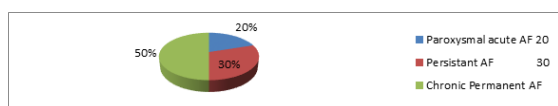
DISCUSSION

Among the 60 patients of AF majority of patients belong to 3rd 4th and 5th decades, with largest number of patients 18 belonged to age group of 51-60 years (30%).

According to Hansaberg et al Philadelphia, USA who have reviewed 463 cases of atrial fibrillation, from 1955-1965 the majority of patients (26%) belonged to the age group of 60-69 years with a close second 25% contribution from the age group of 70-79 years.[6]

According to another studying by Pendse, Fuse Choube et al (1985) who reviewed 50 cases of AF majority of patients belonged to the age group of 56-65 (22%) and 26-35 year.[7] So Comparing our study with above mentioned studies it is clear that the age of onset of AF was much lower in our country compared to those of western standards this may attributable to the fact that rheumatic heart disease is more common in our country.

Etiology	Vhd	Dcm	Ihd	Htn	Mvp	Myeloma	Lone Af	Ppah	Thyrotoxicosis
No of cases	37	11	3	2	1	1	3	1	1
Percentage	61.66%	18.33%	5%	3.33%	1.67%	1.67%	5%	1.67%	1.67%

In our study 60 patients with AF 20 were males (33.33%) and 40 were females (66.67%) these findings were dissimilar to the findings from the study by Ehud Davidson et al where 52% where female and 48% of male. This is due to more common prevalence of mitral stenosis in females8. In our study most of the patients has rheumatic heart disease the breakup of various cases percentage wise in 60 patients with atrial fibrillation of our study was

Aetiology Of AF In Various Studies

Study	No of Cases	Atherosclerotic heart disease	HTN heart disease	RHD	Lone atrial fibrillation	Thyrotoxicosis
Hansaberg etal6 1955-1965	463	43%	14%	11%	6%	1%
Etgyd Davudsib etal5 1988	704	55%	-	22.8%	4.5%	2.6%
Sawyer et al9 1956	407	36%	9%	30%	-	7.6
Meachern et al 101932	575	31%	17%	34%	-	7.5
Goldman etal11 1951	80	55%	-	31.2%	-	5%
Framingham study12 1970	98	40%	-	-	6-15%	12-18
Pendse etal13 1985 (Nagpur)	50	34%	2%	46%	-	4%

So it is clear from the above studies in comparison with our study the commonest cause of AF in our country is Rheumatic heart disease where as western world it is the combination of atherosclerotic and hypertension which are leading causes of AF. This can be attributable to the fact that rheumatic fever is more prevalent in India, due to various factors, which include overcrowding, low socioeconomic status malnutrition non availability and non affordability of advanced medical care to man. In western countries there is increased consumption of fatty acids and high calorie diet and sedentary life and habits like smoking and drinking alcohol which predispose to atherosclerosis and hypertension.[1,7,15,25]

In our study breathlessness was symptom in 50 patients which constitutes 83% of cases in these cases grade II- 40% grade III- 16.6% grade IV 26.67% Palpitations was symptom in 73.33% (44)

patients, 5 patients had weaknesses of limbs, 16 patients (26.67%) had cough with expectoration, swelling of feet in 20 patients (33.33%). According to the study Pendse et al major patients had palpitations and breathlessness as in our study.[7]

In our study patients with atrial fibrillation majority have raised JVP 36 patients (60%), tapping apex 32 Patients (53.3%), parasternal heave (53.3%), S3 Gallop in 8 patients (13.33%), mid systolic murmur at presentation in 33 cases, pan systolic murmur in 10 patients, Early diastole murmur with present in 5 cases, ejection systolic murmur was noted in 3 cases, pulmonary hypertension signs were noted in 37 cases (61.67). Basal crepitations in lungs were present in 38 patients (62%) tender hepatomegaly in 24 patients, pulsatile liver in 10 patients, neurological defects in the form of hemiplegic was seen in 5 patients secondary to the embolic complication. In these 5 stroke patients, one patient had posterior circulation stroke.

According to study by Pendse, Fuse etal, 46 of cases had congestive heart failure, 52% of cases had MDM of mitral stenosis, panystolic murmur of mitral regurgitation in 20% of cases, EDM of aortic regurgitation in 2% aortic stenosis in 2% of cases, bacterial endocarditis was present in 2% of cases7, but in our study no case of endocarditis was found, stoke cases in their study 4% but in our study 7%, peripheral thromboembolism in their in the study upto 2% but in our study no case was found.

In our study 42 patients out of 60 patients (40%) had cardiomegaly with 22 patients had mild cardiomegaly with cardiothoracic ration (52-59%) shadow in shadow appearance in 12 cases (30%) and mitrilisation of left heart border in 16 cases (33%) together indicating dilated left atria in 60% of cases, grade 0 I PVH (cephalisation) seen in 12 patients (30%) pulmonary oedema in 9 cases (15%) and pneumonia in 3 patients 95%). According to study by Pendse, fuse Choube etal, (Nagpur) 64% and 28% of cases had cardiomegaly and left atrial enlargement respectively hypertension with functional TR. These echo findings suggests onset of AF may depend on LVEF and mitral valve area.[7]

In one case honeycomb appearance of myocardium was present in one case of obliterative cardiomyopathy one case of AF is secondary to cyclophosphamide induced papillary muscle necrosis in the treatment of multiple myeloma

In our study rare causes of AF encountered were restrictive cardiomyopathy 2 cases (3.33%) obliterative cardiomyopathy one case (1.67%) thyrotoxicosis 1 (1.67%) only one case of dilated cardiomyopathy had left atrial thrombus. One case of MVP with trivial MR (1.67%) with normal LA size.

Two cases of stage II hypertension 3 case of IHD with left atrial size more than 3.5cm were responsible for AF (7%) AF in these cases is secondary to the diastolic dysfunction of the left

ventricle and ischemic mitral regurgitation was responsible for AF. Cyclophosphamide induced papillary necrosis producing MR and LA dilation was at dosage 1gm/day for 4 days a week each cycle, AF is observed in second cycle. LA clot was present in 12 cases in which all had LA size more than 5.5cms.

In our study most common complication is congestive heart failure 32 patients (53.33%) shock in 10 cases (16.66%), tachycardia induced cardiomyopathy in 7 cases (11.67%) this entity was considered by taking previous echo values of ejection fraction, fractional shortening, dilatation of LA before on set of AF and after onset of AF, this complication was observed in persistent and paroxysmal AF cases incidence of embolic stroke in our study is 7%.

In our study patients in AF with slow ventricular rate were given no drugs. Patients with AF with controlled ventricular rate received amiodarone loading dose of 200mg three time a day for seven days and then 100 to 200mg per day maintenance dose. Out of 47 patients of AF with controlled ventricular rate only 14 patients can afford for oral amiodarone therapy 42 patients out of 47 patients of AF with control ventricular rate already receiving digoxin therapy before study. In patients with AF and fast ventricular rate (9 patients) 4 patients was given oral digoxin 0.5 mg per day and IV amiodarone at loading dose of 150mg and then 15mg per kg per day then 400mg per day for 7days and then 100 to 200mg maintenance dose. Remaining 5 cases received oral digoxin and verapamil until rate controlled

Out of 4 patients received I.V amiodarone plus oral digoxin therapy 2 patients reverted to sinus rhythm after 8 and 16 day respectively another 2 patients had control ventricular rate No patient of AF was given DC shock as there was no available equipment for trans oesophageal echocardiogram for exclusion of LA appendage clot. So from our study and observation of treatment given in our setup to decrease mortality of AF rate control with I.V amiodarone and oral and I.V digoxin therapy is effective

Out of 12 patients with LA clot 2 patients had stroke All 12 patients receive IV heparin 5000 I.U every 6 hourly together with warfarin for 1st 5 days and then 2mg warfarin per day alone as maintenance dose with I.N.R of P.T maintained 1.5 to 2.5 Prophylactic aspirin was given to patients with no LA clot but with risk factors.

CONCLUSION

From our study we concluded that atrial fibrillation is most common arrhythmia in medical wards with varied etiology, incidence ranges from 0.3% (< 55 years) to 3.5% after 55 years of age. The age of onset of atrial fibrillation is younger in our country

when compared to age on set in western countries. In this study female patients are double the frequency of male patients (M: F -1:2). The commonest cause of AF is Rheumatic heart disease, with mitral stenosis being the commonest valvular lesion. This is in complete contrast to western literature where the ischemic and hypertensive heart disease is responsible for most cases. The most common complication of AF in the study is congestive heart failure. Incidence of stroke in AF in our study is 7%. Incidence of AF increases with increase in LA size and increasing LV dysfunction. LA size as measured by echocardiogram was consistently more in chronic permanent AF of prolonged duration. LA size also depends on mitral valve area, LV diastolic and systolic function of left ventricle. The more the duration of AF, the more the LA size, frequency of LA clot formation and stroke incidence also increases, which decreases the chances of reverting to sinus rhythm. Prognosis of AF patients is better when AF is adequately rate controlled along with congestive heart failure treatment. Rate control and anticoagulation were hallmark in AF treatment. Recurrence rate will be very high in AF cases after sinus conversion. Though we achieved advancement in understanding AF pathophysiology and treatment, current response to treatment is unsatisfactory and even very far for reach to common man.

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