

ATRIAL FIBRILLATION IN EMBOLIC STROKE: Anticoagulant Therapy at UNTH Enugu

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SUMMARY

Objective: The decision to commence anticoagulation in a patient with embolic stroke and atrial fibrillation (AF) is often a difficult one for many clinicians. The result can have significant impact on the patient. This study was therefore undertaken to review the use of anticoagulation in embolic stroke in the setting of atrial fibrillation at the UNTH Enugu.

Method: Records of patients managed for embolic stroke at the University of Nigeria Teaching Hospital Enugu in a total study period of 20years (1980 – 1999) were retrospectively studied. Data was collected from patients' case records using a proforma that had been specifically designed for the study.

Results: Twenty three patients with embolic stroke were reviewed. Nine patients had atrial fibrillation as risk factor of which six patients received anticoagulation for secondary prophylaxis of embolic stroke. A greater fraction of requiring males received anticoagulation than that in requiring females. All the patients that were anticoagulated were lost to follow-up.

Conclusion: This study shows a considerable willingness in physicians to commence anticoagulation in the setting of embolic stroke with concurrent atrial fibrillation. Efforts should be made to enhance physician confidence and attitude towards appropriate anticoagulation where required. Measures to encourage adequate follow-up of patients are required.

Key words: *Atrial fibrillation, embolic stroke, anticoagulation*

INTRODUCTION

About 80% of all cases of cerebrovascular accident are thought to be ischaemic in nature. Of this, cardiogenic embolism is responsible for one in every six cases.^{1, 2, 3} Atrial fibrillation is associated with an increased risk of ischaemic stroke, particularly embolic stroke. Following the diagnosis of atrial fibrillation in a patient with embolic stroke, the clinician is often confronted with the question; to anticoagulate or not?

Anticoagulation is more frequently undertaken in developed countries with up to date medical equipment and reliable laboratory support. However, in resource-poor countries which Nigeria typifies, the situation may be different. The University of Nigeria Teaching

Hospital, Enugu, Nigeria, is a major referral tertiary health institution that has been in existence for more than twenty five years. It has 570 bed-capacity with 140 beds in the medical wards. This paper examines the use of anticoagulation by physicians at UNTH in the setting of atrial fibrillation as a risk factor for embolic stroke.

MATERIALS AND METHOD

A retrospective study of 23 patients diagnosed and managed for embolic stroke out of 450 stroke patients admitted to the medical wards of the University of Nigeria Teaching Hospital Enugu between January 1980 and December 1999 was undertaken. Data was obtained from patients' case notes with

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particular emphasis on age, gender, documented risk factors for the embolic stroke, use of anticoagulant and the clinical outcome subsequently. Epi-info version 6 was used for data analysis.

RESULTS

Twenty three patients were identified with embolic stroke. Of these, 6 were females and 17 were males giving a male preponderance of 2.83:1 (Table 1). The female patients had ages ranging from 25 years to 70 years with a mean age of 51.2 years; while the male patients were aged between 43 years and 86 years with a mean age of 59 years (Table 1). The difference was not statistically significant (P > 0.05).

Table 1 Age and Sex Distribution of Patients with Embolic Stroke

Sex	Age Range (years)	Mean age (Years)	Number
Male	43 – 86	59	17
Female	25 - 70	51.2	6

Table 2 shows the identifiable risk factor for embolic stroke in these patients. Nine patients comprising 6 males and 3 females had atrial fibrillation.

Table 2 Identified Risk Factors for Cerebral Embolism

Risk Factor	Number of Patients (%)
Atrial Fibrillation	9 (39.1)
Dilated Cardiomyopathy (with mural thrombus)	3 (13.0)
Sino-atrial Disease	1 (4.3)
Unidentified	10 (43.6)
Total	23 (100)

A total of 8 patients (34.8%) with embolic stroke were anticoagulated with warfarin for secondary prophylaxis after initial heparinisation while 15 patients (65.2%) did not

receive anticoagulant therapy (table 3). Two patients in the latter group received aspirin for its antiplatelet property. Six out of the nine patients with atrial fibrillation (66.7%) were anticoagulated and this comprised the majority of patients that were anticoagulated (75%).

Table 3 Anticoagulation Pattern in Patients with atrial Fibrillation

Sex	Anticoagulate d (%)	Not Anticoagulate d (%)	Total
Male	5 (83.3)	1 (16.7)	6
Female	1 (33.3)	2 (66.7)	3
Total	6 (66.7)	3 (33.3)	9

Only one out of the three female patients (33.3%) with atrial fibrillation received anticoagulant therapy while five of the six male patients (88.3%) with atrial fibrillation were commenced on anticoagulant therapy.

All the 8 patients who were anticoagulated were lost to follow-up after discharge as there were no records suggesting subsequent consultation and continuation of the treatment. No reasons could be found to explain this action.

DISCUSSION

A total of 23 patients (5.1%) were managed for embolic stroke out of 450 stroke cases admitted over the period under review. This contrasts with the rates of 14% and 16.7% found in the European Cerebral Embolism Task Force (CEFT) study and in the USA Framingham study respectively.^{2,3,4} The seemingly lower rate of embolic stroke may be as a result of under diagnosis. That fewer women were affected than men is quite in keeping with the finding in other local studies in Nigeria and Ghana that males have higher rates of strokes than women.^{5,6} Atrial fibrillation (AF) was present in 9 (39.1%) of the 23 patients with embolic stroke in this study. AF has the greatest documented potential of all cardiac

arrhythmias to cause cerebral embolisation. Between 25-34 years the incidence of AF is 2.6/1000 and rises to 38/1000 between 55-64 years⁷. As much as 14.7% of all strokes are associated with atrial fibrillation⁸.

Only 8 patients with embolic stroke (34.8%) were anticoagulated with warfarin while 2 received aspirin and the rest were managed without any of these agents. A lower rate of anticoagulation has often been blamed on various factors which include (1) fear of unwanted bleeding as a complication (2) paucity of reliable laboratory support for monitoring anticoagulation (3) patients' poverty and ignorance impeding necessary and often repeated laboratory tests and also affecting drug compliance, (4) doubtful diagnosis of embolic stroke on the part of the physician made worse by limited availability of CT scan services and (5) poor availability of the anticoagulants. There was a tendency in this study for more men to receive anticoagulation where necessary than women. The reasons for this may have to do more with socio-cultural and economic factors whereby women's health issues are often not given necessary attention and women are generally poorer than men and hence more unable to afford medical treatment.

The treatment of atrial fibrillation has been the subject of much investigation. Boysen in 1993 concluded that anticoagulation with coumarin was associated with a 65% risk reduction for stroke and a risk of intracerebral haemorrhage of only 0.3%/year.⁹

The International Normalized Ratio (INR) was maintained between 1.5 -3. In the European study of anticoagulation in transient ischaemic attacks or minor non disabling stroke, the stroke risk was reduced from 12% to 4%/year in patients treated with warfarin.¹⁰ Though a lesser role has been claimed for aspirin in the prevention of stroke in AF, the European Atrial Fibrillation Trial (EAFT) study showed aspirin to be more effective than placebo.¹⁰ The bleeding complication rate was about 3% in patients on warfarin and about 1% in patients on aspirin. No intracranial bleeding was reported. It was concluded that aspirin

though less effective than warfarin could decrease stroke risk in chronic AF and was generally safer. The Stroke Prevention in Atrial Fibrillation (SPAF) study also documented that aspirin reduced stroke risk in non-valvular related AF¹². However the effect of aspirin was greatest in patients with non cardiac source of embolic stroke. The implication is that aspirin primarily influences the extra cranial vasculature and not cardiac embolic sources.

Systematic reviews have found that people with atrial fibrillation who are at high risk of stroke and have no contra-indication benefit from anticoagulation. Anti platelet agents are less effective than warfarin but are associated with a lower bleeding risk. However aspirin can be used if warfarin is contraindicated or if the risk of ischaemic stroke is low¹³. The optimal time for initiating anticoagulant therapy in patients with recent stroke and atrial fibrillation is controversial. Without anticoagulation therapy stroke recurs early, within two weeks of the event in 3% to 12% of patients.¹⁴ The Cerebral Embolism Study Group^{15, 16} proposed that in patients with small or moderate embolic infarction, anticoagulation therapy should be initiated if there is no evidence of haemorrhage as shown on computed tomography (CT) 24 hours to 48 hours after the stroke. In patients who have large infarcts anticoagulation therapy should be started after 7 days. CT excludes the possibility of delayed haemorrhage.

Though some physicians have expressed reservations about using anticoagulants in cardio-embolic strokes due to the risk of delayed haemorrhage, anticoagulation therapy has been shown to be substantially effective in the secondary prevention of strokes and vascular events^{9, 17}

That all the patients were lost to follow-up after initiation of anticoagulation therapy in this study is a source of concern. Anticoagulation poses certain risks to the patient and these could be fatal. Physicians contemplating the initiation of anticoagulant therapy may do well to counsel the patients on

the risks attached to treatment and the need for careful and regular follow-up.

It may be possible then to infer that anticoagulation is yet to be optimally offered by clinicians in Nigeria to needy stroke patients and this attitude can be helped by removing identified factors that impede physician confidence in doing so.

CONCLUSION

Anticoagulation may be necessary in certain cases of embolic stroke with atrial fibrillation as a recognized risk factor. Attitudes and factors that impede this service from being performed should be done away with in Nigeria so that patients' quality of life can be enhanced. Support services to assist indigent patients may help in the provision of necessary anticoagulation to such patients.

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