

Anticoagulation Therapy in High Risk Patients with Atrial Fibrillation: Retrospective Study in a Regional Hospital

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ABSTRACT

OBJECTIVE: To evaluate the usage of warfarin in high risk of stroke patients with atrial fibrillation using CHADS2 Score.

DESIGN: Retrospective case reviews using Hospital In-patient Enquiry (H.I.P.E) system.

METHODS: This study was carried out on 218 patients admitted in our hospital with atrial fibrillation in last 5 years. Their CHADS2 score was calculated. We tried to identify the proportion of the patients with CHADS2 Score of ≥ 3 (High Risk) and their anticoagulation status on admission.

RESULTS: Out of 218 patients, 130 (60%) were males and 88 (40%) were females. Average age was 71.8 years. Heart failure, hypertension and previous history of stroke or TIA was identified in 46.3%, 39% and 23% respectively. On admission, 26% were on Warfarin, 60% were on Aspirin. 66 patients (30.3%) were identified as high risk (CHADS2 Score of ≥ 3). Only 18 (27%) of these high risk patients were on warfarin.

CONCLUSIONS: The results showed that less than one-third of high risk patients were on warfarin despite having no absolute contraindications. However, >60% of these patients were on Aspirin. More frequent use of Warfarin and further large scale trial is recommended.

KEY WORDS: Atrial fibrillation. Warfarin. CHADS2. Anticoagulation.

INTRODUCTION

Atrial fibrillation (AF) is the common arrhythmia and it is more prevalent in men and with increasing age¹. It affects around 1% of the total population.¹

AF is associated with an increased risk of death with an odds ratio of 1.5 in men and 1.9 in women². The adverse consequences of AF are related to a reduction in cardiac output and propensity for thrombus formation due to blood stasis in the atria and atrial appendage and consequent embolisation, most devastatingly to the cerebral circulation. AF is the most important identifiable risk factor for stroke³. Lifetime risk of developing Atrial fibrillation is 25%⁴. The incidence of stroke associated with AF is 3-5% per year in the absence of anticoagulation⁵. The incidence of stroke is relatively low in patients with AF who are under age of 75-years and have no other risk factors. The prevalence of stroke associated with AF increases strikingly over the age of 75-years and with other risk factors including heart failure, hypertension, diabetes, previous stroke or peripheral embolic event. Peripheral embolisation accounts for only 6.3%⁶. The choice of anticoagulation therapy (warfarin versus aspirin) varies with the estimated risk of ischemic stroke or peripheral embolisation. Although a number of risk stratification models are available for patients with chronic AF, currently CHADS2 score is the best validated and most clinically useful⁷. (C stands for cardiac failure: 1 point, H for hypertension: 1 point, A

for age ≥ 75 : 1 point, D for diabetes mellitus: 1 point and S for previous stroke or transient ischemic attack: 2 points).

Patients with CHADS2 score of 0 are at low risk for ischemic stroke or peripheral embolisation (0.5% per year in the absence of warfarin) and can be managed with aspirin.

Patients with CHADS2 score of ≥ 3 are at high risk (5.3% to 6.9% per year) and in the absence of contraindication should be treated with warfarin.

Patients with a CHADS2 score of 1 or 2 are at intermediate risk (1.5% to 2.5% per year) and in this group the choice between warfarin and aspirin will depend upon many factors, including patient preference.

We undertook a retrospective case study of all the patients with atrial fibrillation admitted to the Medical Unit in The Mid Western Regional Hospital, Nenagh, Co. Tipperary over a period of last five years. We calculated CHADS2 score on each patient and sought to determine if high risk patients for stroke were anticoagulated with warfarin.

METHODS

Using the HIPE (hospital inpatient enquiry) system we performed a search for patients admitted with AF (with or without other diagnoses) over a period of five years. A total of 218 patients were admitted to the medical unit with AF. Patients were risk stratified with the widely used CHADS2 Scoring System. We tried to find the proportion of patients at high risk for stroke

(CHADS2 score ≥ 3) who were anticoagulated with warfarin. We included all the patients irrespective of them being on warfarin or not on admission.

RESULTS

Of the 218 patients 130 (60%) were males and 88 (40%) were females. The average age was 71.6 years. Heart failure and hypertension were the commonest associations, 46.3% and 39% respectively. Sixteen patients were having ischaemic stroke on CT Brain. Two had Intracranial Haemorrhage proved on CT Brain while 5 had TIA with normal CT Brain. Ten patients had reported excessive alcohol intake. The total number of patients on warfarin was 57 (26%) while a total of 131 (60%) were on aspirin. The number of high risk patients for stroke (CHADS2 score ≥ 3) was 66 (30.3%), and only 18 of these patients were on warfarin, which is 27% of high risk patients (Table I).

**TABLE I:
BASELINE CHARACTERISTICS OF STUDY
SUBJECTS (n=218)**

Average age (in years)	71.6	
Males	130	60%
Females	88	40%
Patients with Hypertension	85	39%
Patients with heart failure	101	46.3%
Patients with diabetes mellitus	18	8.25%
Patients with history of TIA/CVA	23	10.5%
High risk patients with CHADS2 score ≥ 3	66	30.3%
Patients on warfarin (total)	57	26%
High risk patients on warfarin	18	27%
Patients on aspirin (total)	131	60%
High risk patients on aspirin	44	66.7%

DISCUSSION

These results show that, on admission, less than one third (27%) of the 66 high risk patients were on warfarin. However two thirds (66.7%) of these patients were treated with aspirin. Aspirin reduces the risk of stroke by just 22% while for warfarin this figure is 61%⁸. The efficacy of warfarin for prevention of stroke in patients with Atrial fibrillation was studied in SPAF-I, SPAF-II, AFASK, BAATAF, SPINAF and CAFA trials^{9, 10}. These trials proved that adjusted dose of warfarin

significantly reduces stroke risk in patients with Atrial fibrillation when compared with Aspirin or Placebo^{11, 12}. International Normalization Ratio (INR) in between 2 and 3 is recommended for those who receive warfarin^{13, 14}. There may be several reasons for under using warfarin but in our study, only 2 patients having a history of intracranial haemorrhage in the past were absolutely contraindicated for warfarin while 10 other patients with alcohol dependency may have a relative contraindication for warfarin. The usual absolute contraindications to warfarin therapy are history of haemorrhagic stroke or serious bleeding while on warfarin. The likelihood of severe morbidity or mortality is substantially higher from intracranial haemorrhage than from other types of major haemorrhagic complications associated with warfarin¹⁵. The relative contraindications are usually increased risk of falls, alcohol abuse, and difficulty in regular monitoring of therapy, etc. Even allowing for these contraindications, we feel that warfarin has been significantly under prescribed.

CONCLUSIONS

In view of the devastating consequences of stroke resulting from AF in high risk patients, anticoagulation with warfarin should be used more often than it is being used currently¹⁶. The number of thromboembolic events and particularly stroke reduced by this approach is significantly higher than the number of serious bleeding episodes due to warfarin therapy as long as this is closely monitored by regularly checking the international normalisation ratio (INR). In view of these findings, a large scale trial focussing on anticoagulation in AF to achieve optimal treatment in high risk patient is needed.

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