ORIGINAL ARTICLE

ATRIAL FIBRILLATION AND STROKE PREVENTION PRACTICES IN PATIENTS WITH CANDIDACY FOR ANTICOAGULATION THERAPY

Ikram Ullah, Farooq Ahmad*, Salman Ahmad, Yasir Hayat*****

Cardiovascular Department, Lady Reading Hospital, Peshawar, *Gajju Khan Medical College, Swabi, **Khalifa Gulnawaz Hospital, Bannu, ***North West General Hospital Peshawar-Pakistan

Background: Stroke secondary to Atrial Fibrillation is usually due to thrombi formed in the left atrium and left atrial appendage embolizing to cause ischemic stroke. Therefore, in patients with Atrial Fibrillation, antithrombotic therapy is recommended to prevent stroke. Vitamin K antagonist therapy is most widely used antithrombotic therapy for patients with valvular and non valvular AF. Aspirin is recommended only in low risk patients. This study was conducted to determine the stroke prevention practices in local patients with atrial fibrillation who were candidates for anticoagulation therapy. **Methods:** This was descriptive cross sectional study conducted at Cardiovascular Department Lady Reading Hospital Peshawar and Cardiology Department Hayatabad Medical Complex Peshawar. Sampling technique was non probability consecutive. Patients visiting OPD of respective hospitals with EKG evidence of AF and having CHADES VASC score 2 or more or having mitral stenosis and AF were included in the study. Patients with additional indications for anticoagulation were excluded from the study. **Results:** A total of 205 patients with atrial fibrillation were studied. Mean age was 60.7±14.7 years. Male were 55.6% (n=114) while 44.4% (n=91) were female. Of these 149 (72.7%) were candidates for anticoagulation based on CHA2DS2 VASc score of 2 and more or mitral stenosis with AF. Only 27.5% (n=41) patients were adequately treated with anticoagulant therapy using VKA or novel oral anticoagulant drugs. Majority of them were getting dual antiplatelet therapy (DAPT). **Conclusion:** Most patients with AF and high risk characteristics for thromboembolism are not receiving proper stroke prevention therapies.

Keywords: Atrial fibrillation, stroke, CHA2DS2-VASc, DAPT, warfarin, anti-coagulation, therapy, prevention

J Ayub Med Coll Abbottabad 2015;27(3):669–72

INTRODUCTION

More than 2 million people in USA are effected by Atrial fibrillation (AF), and the problem is worse in Europe where more than 4 million people are affected.[1,2] Older population is more effected by AF,[1] and Patients with AF are reported to have a five-fold increased risk of stroke; moreover, compared with the other identified risk factors for stroke (hypertension, heart failure, and coronary heart disease), AF has the strongest association.[3]

AF is less common in Asian countries and Asian communities as compared to other population but Asians are unfortunately have more risk of developing stroke and other complications and having greater mortality.

Unfortunately warfarin use is less common in Asian countries primarily owing to the universal challenge of achieving therapeutic anticoagulation and greater risk of haemorrhages in Asian patients. Instead, antiplatelet therapy is commonly used in Asian countries which is in fact not an effective way of stroke prevention.[4]

Stroke secondary to Atrial Fibrillation is usually due to thrombi formed in the left atrium and left atrial appendage embolize to cause ischemic stroke.[2] Therefore, in patients with Atrial Fibrillation, antithrombotic therapy is recommended to prevent stroke. The ESC 2010 guidelines and ACC/AHA guidelines for atrial fibrillation 2014 recommend that patients with a CHADS2 or CHA2DS2-VASc score ≥2 should be given oral anticoagulation therapy; patients with a CHA2DS2-VASc score of 1 may be considered for either oral anticoagulation therapy or Aspirin and patients with a 0 score should either be given Aspirin or no stroke prevention therapy.[5]

Most commonly used therapy for patients with valvular and non valvular AF is in the form of warfarin. Warfarin is having narrow therapeutic window and is associated with increased risk of bleeding which limits its use in clinical practice.[6–8]

Antiplatelet therapy has been widely used as an agent for stroke prophylaxis in patients with AF. Aspirin is recommended only in low risk patients or in whom Vitamin K antagonist (VKA) therapy is contraindicated.[2,9] In past several studies performed to check the efficacy and safety of antiplatelet therapy. ACTIVE W trial found that10 Clopidogrel plus Aspirin therapy was inferior to warfarin in stroke prevention while those patients who were unfit for warfarin therapy ACTIVE A trial showed that

clopidogrel plus ASA therapy is superior to aspirin alone therapy.[11]

This study will show the anticoagulation practice in local population and will identify the magnitude of patients not properly treated which will help to find solution for proper practicing anticoagulation therapy in these high risk population.

MATERIAL AND METHODS

This is a descriptive cross sectional study conducted at Cardiovascular Department Lady Reading Hospital, Peshawar and Cardiology Department Hayatabad Medical Complex Peshawar from Dec 2014 to Feb 2015. Sampling technique was non probability consecutive sampling. Patients visiting OPD of respective hospitals with EKG evidence of AF and having CHA2DS2 VASc score 2 or more or having mitral stenosis and AF were included in the study. All those patients with additional indication for anticoagulation were excluded from the study.

All patients after informed consent were included in the study. Detail History was taken about the onset, duration, symptoms and treatment of AF. History was also taken about associated conditions like valvular heart disease, coronary artery disease, Hypertension, Diabetes, Heart failure, previous Thrombo embolism and drug history for any illness. Previous medical record was reviewed. All patients were further investigated with ECG, Chest X-ray, Echocardiography and Random blood sugar.

Data was collected and recorded on pre specified *pro forma*. Data was analysed using SPSS version 16 Numerical variables like age and Hypertension was presented as mean±standard deviation. Categorical variables were expressed as frequency and percentages.

RESULTS

A total of 205 patients with atrial fibrillation were studied. Mean age was 60.7±14.7 years. Male were 55.6% (n=114) while 44.4% (n=91) were female. Of these 149 (72.7%) were candidates for anticoagulation based on CHA2DS2 VASc score of 2 and more or mitral stenosis with AF. In total study population (n=205) the most common cause of AF was Hypertension 38% (n=78), followed by coronary artery disease 27% (n=55), Cardiomyopathy 26% (n=53) and Mitral Valve Disease 9% (n=19). Only 27.5% (n=41) patients were adequately treated with anticoagulant therapy using VKA or novel oral anticoagulant drugs. Rest of the 72.5% (n=108) patients who were candidates for anticoagulation were deprived of this therapy. Majority of them were getting DAPT 34.9% (n=52), aspirin 16.8% (n=25), clopidogrel 13.4% (n=20) or nothing 7.4% (n=11).

Table-1: Different types of therapies for stroke prevention in patients with CHA2DS2-VASc score ≥2 or Mitral stenosis and AF

Type of therapy	Patient number (%)
Dual anti platelet therapy	52 (34.9)
Anticoagulation	41 (27.5)
Aspirin	25 (16.8)
Clopidogrel	20 (13.4)
No therapy	11 (7.4%)
Total	149

Table-2: Underlying causes of AF and different types of stroke prevention therapies in patients who are candidates for Anticoagulation therapy (n=149)

	DAPT	Anticoagulation	Aspirin	Clopidogrel	Nil	Total
HTN	9	10	15	12	3	49
CAD	26	8	4	6	0	44
Cardiomyopathy	12	12	5	2	6	37
Mitral Stenosis	5	11	1	0	2	19
Total	52	41	25	20	11	149

DISCUSSION

Patient with AF are high risk for stroke so many risk stratification scheme has developed to divide them into low, moderate, or high risk group to manage them accordingly. So initially CHADES2 scoring system was which includes known risk factors like congestive heart failure, hypertension, age more than 75 years, Diabetes or previous stroke/transient ischemic attack (TIA; two points, to reflect its greater associated risk).[12] The most recent and recommended scheme by ACC/AHA guidelines 2014 for AF, referred to as CHA2DS2- VASc, which included additional risk factors like vascular disease, female gender and vascular disease.[13]

Due to multiple reasons patients who are candidates for anticoagulation are not properly treated in this part of the world. These factors include low literacy rate, awareness of disease and importance of anticoagulation, lack of health facilities and lack of access to proper cardiologist, poverty and failure to manage INR due to multiple reasons. Most of these patients are either not put on any therapy or most commonly on antiplatelet medication rather than anticoagulation.

In our study only 27.5% patients with AF and candidacy for anticoagulation were receiving anticoagulation for stroke prevention. Remaining patients were either on antiplatelet therapy or no therapy. This shows that most of patients in our local set up do not receive proper anticoagulation. Majority of our patients are usually put on antiplatelet medications in the form of clopidogrel, aspirin or dual antiplatelet medications.

A study was conducted by Frewen J[14] *et al* in patients with AF who were candidates for anticoagulation therapy based on CHADES VASC score ≥ 2 found that only 40 % of patients were put on anticoagulant treatment. This study was conducted in Ireland so the findings are more than our findings of 27%.This also show that the problem also exists worldwide.

In France a Study was conducted by Tavassoli N[15] *et al* on older patients with atrial fibrillation and two or more risk factors for stroke. They found that only 50% patients were on some form of anticoagulant or antiplatelet treatment in which only 50 % were on warfarin therapy. This study was performed in older individuals and this shows that fear of haemorrhagic complication in older population is a major cause of anticoagulant therapy under use. This was further proved by Tulner LR *et al* [16] who studied anticoagulation practice in geriatric patients who were candidates for anticoagulation. They found that only 51.8% patients were on anticoagulation treatment.

A study conducted by Tanislav C *et al*[17] found that only 45% patients with AF were receiving anticoagulation therapies whom were candidates for anticoagulant therapy. This shows that stroke prevention Therapy in AF is not properly done worldwide though the problem is more severe in our local practice. There are many other studies like one performed by Shantsila E *et al*[18] which also show that high risk patients with AF are not receiving recommended treatment for stroke prevention in the form of anticoagulation. In their study only 46 % of patients were taking anticoagulation therapy.

Regarding various causes of AF it was found in our study that only 18% patients with CAD were on anticoagulant treatment. This low frequency of anticoagulation therapy in these patients is due to fear of bleeding as these patients are usually on antiplatelet therapy. Mitral stenosis was the only condition in whom high frequency (58%) of anticoagulation practice was found, probably our physicians are more concerned about its higher risk for thrombo embolic complication and more stress their patients with Mitral stenosis to continue warfarin as majority of these patients usually experience these complications.

From these studies it is clear that in spite of clear recommendation for anticoagulation there is lack of proper treatment and the problem is not only in our local practice but it exist worldwide for one or other reason.

We studied only those patients who presented to OPD for management of AF or underlying disease leading to AF. In our local population there is large number of patients who are either unaware of AF or associated high risk characteristics for thrombo embolism. Many patients are managed by general physicians in rural areas who are either unaware of importance of anticoagulation or afraid of bleeding complication of warfarin. So the sample may be not truly representative of local practice of anticoagulation and the problem appears to be worse in our local set up.

CONCLUSION

AF is still an undertreated condition and most patients with AF and high risk characteristics for thromboembolism are still deprived of benefits of anticoagulant therapy. Majority of these high risk patients are treated with antiplatelet therapy.

AUTHOR'S CONTRIBUTION

IU: Concept, design, data collection. FA: Literature search and statistics. SA: Discussion and literature search. YH: Final review and correction.

REFERENCES

1. Go AS, Hylek EM, Phillips KA, Chang Y, Henault LE, Selby JV *et al*. Prevalence of diagnosed atrial fibrillation in adults: national implications for rhythm management and stroke prevention: the AnTicoagulation and Risk Factors in Atrial Fibrillation (ATRIA) Study. JAMA 2001;285:2370–5.
2. Fuster V, Ryde ´n LE, Cannom DS, Crijns HJ, Curtis AB, Ellenbogen KA *et al.* ACC/ AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation— full text. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines (Writing Committee to Revise the 2001 Guidelines for the Management of Patients With Atrial Fibrillation): developed in collaboration with the European Heart Rhythm Association and the Heart Rhythm Society. Europace 2006;8:651–745.
3. Wolf PA, Abbott RD, Kannel WB. Atrial fibrillation as an independent risk factor for stroke: the Framingham Study. Stroke 1991;22:983–8.
4. Sabir I, Khavandi K, Brownrigg J, Camm AJ .Oral anticoagulants for Asian patients with atrial fibrillation. Nat Rev Cardiol. 2014;11(5):290-303
5. European Heart Rhythm Association; European Association for Cardio-Thoracic Surgery, Camm AJ, Kirchhof P, Lip GY, Schotten U, Savelieva I, Ernst S, *et al* . Committee for Practice Guidelines. Guidelines for the management of atrial fibrillation: the Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC). Europace. 2010;12(10):1360–420
6. Hart RG, Pearce LA, Aguilar MI. Meta-analysis: antithrombotic therapy to prevent stroke in patients who have nonvalvular atrial fibrillation. Ann Intern Med 2007;146:857–67.
7. Waldo AL, Becker RC, Tapson VF, Colgan KJ, for the NABOR Steering Committee. Hospitalized patients with atrial fibrillation and a high risk of stroke are not being provided with adequate antgulation. J Am Coll Cardiol 2005;46:1729–36.
8. Ansell J, Hirsh J, Hylek E, Jacobson A, Crowther M, Palareti G, *et al*. Pharmacology and management of the vitamin K antagonists: American College of Chest Physicians evidence-based clinical practice guidelines (8th Edition). Chest 2008;133:160S–98S.

9. Singer DE, Albers GW, Dalen JE, Fang MC, Go AS, Halperin JL *et al*. Antithrombotic therapy in atrial fibrillation: American College of Chest Physicians evidence based clinical practice guidelines (8th Edition). Chest 2008;133:546–92.
10. ACTIVE Writing Group of the ACTIVE Investigators. Clopidogrel plus aspirin versus oral anticoagulation for atrial fibrillation in the Atrial fibrillation Clopidogrel Trial with Irbesartan for prevention of Vascular Events (ACTIVE W): a randomized controlled trial. Lancet 2006;367:1903–12.
11. The ACTIVE Investigators, Connolly SJ, Pogue J, Hart RG, Hohnloser SH, Pfeffer M, *et al*. Effect of clopidogrel added to aspirin in patients with atrial fibrillation. N Engl J Med 2009;360:2066–78.
12. Stroke Risk in Atrial Fibrillation Working Group. Comparison of 12 risk stratification schemes to predict stroke in patients with nonvalvular atrial fibrillation. Stroke 2008;39:1901–10
13. Lip GY, Nieuwlaat R, Pisters R, Lane D, Crijns H. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor based approach: The Euro Heart Survey on Atrial Fibrillation. Chest 2010; 137:263–72.
14. Frewen J, Finucane C, Cronin H, Rice C, Kearney PM, Harbison J, *et al*. Factors that influence awareness and treatment of atrial fibrillation in older Adults. QJM. 2013;106(5):415–24.
15. Tvassoli N, Perrin A, Bérard E, Gillette S, Vellas B, Rolland Y, *et al.* Factors associated with undertreatment of atrial fibrillation in geriatric outpatients with Alzheimer disease. Am J Cardiovasc Drugs. 2013;13(6):425-33
16. Tulner LR, Van Campen JP, Kuper IM, Gijsen GJ, Koks CH, Mac Gillavry MR, *et al*. Reasons for undertreatment with oral anticoagulants in frail geriatric outpatients with atrial fibrillation: a prospective, descriptive study Drugs Aging 2010;27(1):39-50.
17. Tanislav C, Milde S, Schwartzkopff S, SiewekeHe N, Krämer IH, Juenemann M, *et al*. Secondary stroke prevention in atrial fibrillation: a challenge in the clinical practice. BMC Neurolo 2014;14:195
18. Shantsila E, Wolff A, Lip GYH, Lane DA. Optimising stroke prevention in patients with atrial fibrillation: application of the GRASP-AF audit tool in a UK general practice cohort. Br J Gen Pract 2015;e16–23.

Address for Correspondence:

Dr Ikram Ullah, Cardiovascular Department Lady Reading Hospital, Peshawar-Pakistan
Cell: +92 313 477 4433
Email: ikramcardio@yahoo.com