FACTORS ASSOCIATED WITH UNDER UTILIZATION OF ANTICOAGULATION IN PATIENTS WITH ATRIAL FIBRILLATION WITH HIGH RISK PROFILE FOR THROMBOEMBOLISM

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ABSTRACT

OBJECTIVE: To determine the factors associated with under utilization of anticoagulation in patients with atrial fibrillation (AF) with high risk profile for thromboembolism.

METHODS: This descriptive cross-sectional study was conducted at Cardiovascular Department Lady Reading Hospital Peshawar, Pakistan and Cardiology Department Hayatabad Medical Complex Peshawar, Pakistan from 01-12-2014 to 28-02-2015. All patients visiting OPD of respective hospitals with electrocardiogram (ECG) evidence of AF and CHADS VASC score 2 or more and mitral stenosis and AF were included.

RESULTS: Out of 205 patients, 114 (55.6%) were males and mean age was 60.7±4.7 years. Out of 205, 149 (72.7%) were candidates for anticoagulation. AF patients with CHA2DS2 VASc score of ≥2 were 130 while patients with mitral stenosis and AF were 19. Only 41(27.5%) patients were adequately treated with anticoagulant therapy using vitamin K antagonist (VKA) or novel oral anticoagulant drugs. Factors associated with underutilization of anticoagulant therapy were, patient preference 27.8%, older age of 65 and above 17.6%, use of dual antiplatelet therapy 28.7 %, monitoring issue 9.3%, affordability 8.3% and prior complications due to anticoagulation therapy in 8.3%.

CONCLUSION: Patients refusal of taking anticoagulation therapy, poverty, older age, lack of monitoring facility, previous complications or use of anti-platelet therapy are major causes of under utilization of anticoagulant therapy in patients with AF.

KEY WORDS: Atrial Fibrillation (MeSH), CHADS VASC score 2 (Non-MeSH), Dual Antiplatelet Therapy (DAPT) (Non-MeSH), Warfarin (MeSH) .

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INTRODUCTION

Atrial fibrillation (AF) is a most common risk factor for repeated thromboembolism. Patients suffering from AF are at five times higher risk for strok.[1] Though other risk factors are also responsible for stroke like ischemic heart disease and hypertension but AF is still the strongest risk factor.[1] Asian population is considered to be more prone to hemorrhagic complication of warfarin and maintain therapeutic INR is also difficult in Asians, as a result warfarin is less commonly used and physicians prefer to use antiplatelet for stroke prevention.[2]

Stroke prevention in patients with AF is usually achieved with oral anticoagulation (OAC) in the form of either vitamin K antagonist (VKA) or a non-VKA oral anticoagulant (NOAC).[3,4]

Warfarin is the most commonly used OAC, but difficulty in maintaining therapeutic INR is the main cause of its under use[5-9] and as a result most patients are treated with aspirin, though its less effective and having similar bleeding risk as warfarin.[10,11] In UK, a trial name GRASP-AF conducted which enrolled 1857 patients with AF and they reported that 34% of patients with a CHADS2 score ≥2 did not receive OAC therapy.[5] Currently before putting patients on OAC, risk stratification is done for stroke using a validated risk stratification tool,[3,4] and new guidelines recommend using the CHADS2 VASc score.[12]

Unluckily in spite of clear recommendation for anticoagulation still most patients are not getting anticoagulation. There are several risk factors responsible for not using anticoagulation in patients who are candidates for such therapy. Fear of bleeding complications, problem with monitoring, advanced age and physicians lack of knowledge of current guidelines are main factors responsible for under use of anticoagulation.[13]

Part of this data has already been published to find type of therapy used in patients with high CHADS2 VASc score[14] and the aim of this study was to find out various factors responsible for under treatment of patients with atrial fibrillation in the form of anticoagulation. This will help to address those issues which are responsible for failure of practicing anticoagulation in our local population and to find out solution for improving guideline based practice.

METHODS

This study was descriptive cross sectional study and it was performed in two hospitals, Cardiovascular Department Lady Reading Hospital Peshawar and Cardiology Department Hayatabad Medical Complex Peshawar from 01-12-2014 to 28-02-2015. Non probability consecutive sampling was taken. All patients visiting OPD of these departments with EKG evidence of AF and either having mitral stenosis or high risk of thromboembolism defined as Non-valvular AF with CHADS VASc score ≥2 were included. All those patients with additional indication for anticoagulation including prosthetic valves, history of deep venous thrombosis and pulmonary embolism were excluded from the study. All patients after informed consent were included in the study.

Detailed discussion with patients was carried out regarding reasons for discontinuing/ not taking OAC therapy. Data was collected and recorded on pre specified proforma. Data was analyzed 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

Out of 205 patients, 114 (55.6%) were males and mean age was 60.7 ±14.7 years. Out of total only 149 (72.7%) were candidates for anticoagulation therapy based on high CHADS2 VASc score (≥2) or mitral stenosis with AF. Hypertension (HTN) was the most common (n=78; 38%) cause of AF followed by coronary artery disease (CAD) in 27% (n=55) cases, cardiomyopathy (n=53; 26%) and mitral valve disease in (n=19; 09%) cases.

Out of 149 potential candidates for anticoagulation therapy, only 41 (27.5%) were adequately treated with anticoagulant therapy using VKA or novel oral anticoagulant drugs.

Out of 108 patients who were candidates for anticoagulation and deprived of this therapy, 31 (28.7%) were not prescribed anticoagulation because they were on dual antiplatelet therapy (DAPT) for other indications. The second major cause of not prescribing anticoagulant therapy was patient's refusal on his personal preference for this therapy after knowing the risks/ benefits of therapy (Table 1).

DISCUSSION

In this study majority of patients (72.5%) were deprived of anticoagulation therapy and only 27.5% patients with AF and candidacy for anticoagulation were receiving anticoagulation for stroke prevention. Most of these patients were using antiplatlets medication either in the form of aspirin, clopidogrel or both. The problem is though worse in our local setup but exist worldwide. This fact is supported by a study conducted by Frewen J[13] et al, in Ireland showing that only 40% of patients were prescribed anticoagulation. Tanislave C et al,[15] studied same issue and found that only 45% patients were on anticoagulation.

Regarding various factors responsible for under treatment of patients who need anticoagulation we found that 28.7% patients were not prescribed the therapy because they were also receiving antiplatelet treatment for one or other reason and physician was worried for complication. These causes were either post PCI or patients with acute coronary syndrome having AF and need anticoagulation. Other factor which was cause of under treatment was patient preference not to take warfarin because of fear of complications, job status or need for regular monitoring. Other less common causes were the patient's socioeconomic status who are not affording of regular purchasing of medicine. Due to lack of availability of facilities for PT/INR few patients were not prescribed warfarin. Some patients who experienced complications in past never agreed to take warfarin. Similar study was performed by O'Brien EC et al,[16] to find the various factors responsible for under treatment of patients who were candidate for anticoagulation. They found that major factor, in 27.5% cases, for under treatment of these patients is patient preference not to take warfarin therapy which is similar to our study that accounted for 27.8% cases. Same study also mentioned that old age and frailty is responsible for lake of anticoagulation in 17% patients which is similar to our findings. Contrary to their findings of 10% antiplatelet medications, we found higher frequency of patients taking antiplatelet medication due to the fact that most of these patients are usually treated by general physicians who either are unaware of the importance of anticoagulation or fear complications and monitoring.

STUDY LIMITATION

We only studied patients who presented to tertiary care hospital for management. Most of these patients are treated by general physicians, so the

TABLE I: FACTORS ASSOCIATED WITH DECREASED USE OF ANTI COAGULATION THERAPY(N=108)

Associated Factors	Frequency	Percentage
Use of Antiplatelets	31	28.7
Patient Preference	30	27.8
Monitoring Issue	10	9.3
Affordability	9	8.3
Complications	9	8.3
Old Age	19	17.6
Total	108	100.0

data may not be truly representative of the population. Moreover, there may be other causes which may be responsible for under treatment of these patients like patient awareness of disease and physician awareness of anticoagulation recommendation.

CONCLUSION

Anticoagulation in AF is still underutilized and most patients are not properly treated due to their refusal of taking such therapy, poverty, older age, lack of monitoring facility or other indication for antiplatelet therapy.

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CONFLICT OF INTEREST

Authors declared no conflict of interest

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

AM: Concept & study design, acquisition of data, supervision, critical revision, final approval of the version to be published

FA: Analysis and interpretation of data, Drafting the manuscript, final approval of the version to be published

Ik, IA: Acquisition of data, critical revision, final approval of the version to be published

SA: Drafting the manuscript, final approval of the version to be published

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.