CASE REPORT NEW ONSET ATRIAL FIBRILLATION IN THE VERY ELDERLY

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Abstract

An 83-year-old woman presented to her primary care provider with signs and symptoms of atrial fibrillation. Atrial fibrillation is very common in the elderly population, with a prevalence of 10% in those over 80 years of age.[1,2] The management of atrial fibrillation in the very elderly has two important aspects; the first is prevention of a thrombo-embolic event and the second is symptom control. Atrial fibrillation is a significant contributor to stroke risk in the elderly, however, commonly elderly patients have been undertreated due to physician concerns of bleeding.[1,3] The CHADS2 score and HAS-BLED score are popular tools that can be used in this situation to compare the risks and benefits of anticoagulation.[4] Anticoagulation of patients with paroxysmal atrial fibrillation is based on clinical judgment. Symptomatic management to consider includes rate control, rhythm control and cardioversion.[1] In most cases rate control alone is appropriate and decreases the symptoms of atrial fibrillation.[2] This is typically achieved pharmacologically using beta-blockers or calcium channel blocking agents.[1,2] Rhythm control should be considered in those who are highly symptomatic or have congestive heart failure with diastolic dysfunction. The use of pharmacologic agents available for rhythm control is limited by the co-morbidities and increased occurrence of side effects in the elderly population.[2] For those who have recurrent atrial fibrillation despite rhythm control medication it is not recommended to attempt cardioversion. Both electrical and chemical cardioversion are linked to serious side effects in the elderly.[1] It is also important to note that in patients over 65 with at least one stroke risk factor there was no significant improvement to survival with rate or rhythm control.[1] Atrial fibrillation is common in the very elderly and it is very important that it is appropriately managed. It is critical that anti-coagulation is considered and begun if appropriate due to the significant contribution of atrial fibrillation to stroke risk in this population. Symptomatic relief through rate control should be attempted. Rhythm control should be considered in those who are highly symptomatic.

Case Description

An 83 year old woman presented to her primary care provider with complaints of weakness and fatigue for the last three days. Past medical history was remarkable for anxiety and current medications included zopiclone and lorazepam. The patient denied any shortness of breath or chest pain. Upon examination vitals were normal except for an irregularly irregular pulse with a heart rate of 118 bpm. An EKG was ordered to confirm atrial fibrillation and the patient was started on ASA 81 mg. The following day the patient complained of weakness and increasing dyspnea on exertion but no chest pain or dyspnea at rest. The EKG confirmed atrial fibrillation with rapid ventricular response. The patient was started on rivaroxaban 15 mg and metoprolol 25 mg and referred to internal medicine for a consult. One week later the patient was seen again in clinic. The patient felt much better and less fatigued. On examination her BP was 144/72, heart rate was 46 and regular. This lead to a diagnosis of paroxysmal atrial fibrillation, her

metoprolol was reduced to 12.5 mg daily. The patient was followed up with in the following week. She felt her energy levels were “back to normal”. On examination her BP was 148/78, her pulse was 55 bpm and regular. The decision was made to continue with present management.

Literature Review

A literature review was conducted to determine appropriate management of atrial fibrillation in those over 80 years of age and what affect treatment has on quality of life. A search was conducted of PubMed. Using the terms "Atrial Fibrillation"[Mesh] AND "Aged, 80 and over"[Majr] AND “Quality of life”[Majr] no articles were found. Using the terms "Atrial Fibrillation"[Mesh] AND "Aged, 80 and over"[Majr] 6 articles, of which, 1 cohort study was relevant. A search using ((elderly[MeSH Terms]) AND atrial fibrillation[MeSH Terms]) AND quality of life[MeSH Terms] and filtered using “reviews”, “published in last 5 years” and “80+ years” yielded 3 articles, of which, 2 reviews were relevant. Filtering the above search by “clinical trial”, or “randomized clinical trial” yielded 12 articles, 3 of which were relevant.

Discussion

Due to age-related changes of the heart and increasing co-morbidities, the prevalence of atrial fibrillation increases with age. The prevalence in those over 80 is approximately 10%.[1,2] Atrial fibrillation is more likely to be asymptomatic in the elderly and atrial fibrillation is often discovered incidentally.[1,2] Other common presentations in elderly patients include fatigue, stroke or progressing heart failure or angina.[2] Atrial fibrillation can be diagnosed using a single 12 lead EKG. For new-onset atrial fibrillation a more involved workup including a chest x-ray, echocardiography, and blood work including thyroid hormone may be appropriate.[1]

Atrial fibrillation is related to increased mortality and morbidity even after adjusting for age and other risk factors.[1] Atrial fibrillation significantly increases the risk of stroke in the elderly, however historically elderly patients have been undertreated with anticoagulation due to physician concerns of bleeding.[2,3]In the Framingham Study they found that only atrial fibrillation remained a significant risk factor for stroke in those aged 80 to 89 and the impact of factors such as hypertension and other cardiac conditions was no longer significant. The risk of stroke that could be attributed to atrial fibrillation reached 30.8% in those aged 80 to 89.[3] The CHADS2 score is a popular and widely validated tool used to stratify stroke risk in patients with atrial fibrillation.[4] It is worth noting that all patients older than 75 are considered moderate risk and therefore anticoagulation is indicated. The presence of any 2 additional risk factors (CHF, hypertension, diabetes or previous stroke/TIA) moves the patient into the high-risk category. Using the newer CHA2DS2VASc yields similar results and suggests that all patients over 75 receive anticoagulation unless there is a major contraindication.[1] The benefits of preventing stroke through anticoagulation must be balanced against the increased risk of a major bleed. The HAS-BLED score has only modest performance in predicting bleeding however it has been shown to perform better than other bleeding

scores.[4] Anticoagulation can be achieved using warfarin. The Canadian Cardiovascular Society's Atrial Fibrillation Guidelines suggest an INR target between 2.0 to 3.0.[5] A popular alternative to warfarin is novel oral anticoagulants (NOAC) as they do not require INR monitoring. The CCS Atrial Fibrillation guidelines recommend choosing a NOAC over warfarin for most patients.[5] NOACs, including dabigatran, rivaroxaban, apixaban and edoxaban, have been shown in clinical trials to be non-inferior to warfarin in thromboembolic protection and to have good safety profiles.[1,2,5] For patients who are at high risk of a stroke and for whom oral anticoagulation is contraindicated percutaneous left atrial appendage closure may be considered. This procedure seals off the left atrial appendage, which is the point of origin for approximately 90% of left atrial thrombi, and can significantly reduce thromboembolic risk.[1] This therapy is still relatively novel, but has shown good results in elderly patients.[1,2]

First line therapy in the elderly with atrial fibrillation is rate control.[1,2] Beta-blockers have been shown to be most effective at achieving rate control but non-dihydropyridine calcium channel blockers can be used as an alternative. Digoxin as a rate control agent should be limited to those in acute heart failure, as it has been shown to be an independent risk factor for death in patients without heart failure.[1] A heart rate target of less than 100 bpm is recommended as tighter control has not been shown to improve mortality or morbidity.[1,2]

Rhythm control should be considered in those who are highly symptomatic or have congestive heart failure with diastolic dysfunction. The use of pharmacologic agents available for rhythm control is limited by the co-morbidities and increased occurrence of side effects in the elderly population.[2] Class I agents are proarrhythmic and generally not recommended for elderly patients. In particular, flecainide has been shown to increase mortality in those with structural heart disease, and should be used cautiously because of the high likelihood of underlying disease in this population.[1] Class III agents are the best choice for those with CAD and without heart failure, however there is an increased risk in cardiovascular events with these drugs for older adults who have comorbidities such as diabetes, hypertension, heart failure or stroke.[2] Amiodarone is the drug of choice for patients with heart failure and atrial fibrillation, however, it can have serious adverse effects including pulmonary fibrosis. Patients taking Class III drugs must be monitored to ensure that the QTc does not exceed 520 ms.[1] For those who have recurrent atrial fibrillation despite rhythm control medication it is not recommended to attempt cardioversion. Both electrical and chemical cardioversion are linked to serious side effects in the elderly.[1] One study using data from the ORBIT-AF registry found that cardioversion was not associated with improved quality of life or atrial fibrillation progression.[6] It is also important to note that in patients over 65 with at least one stroke risk factor there was no significant improvement to survival with rate or rhythm control.[2] An alternative to pharmacologic rhythm control is catheter ablation of atrial fibrillation. Currently the bulk of studies about the efficacy and safety of this technique have been performed on those under 75 years of age. More recent studies have suggested that the results are similar in older patients.[1] For atrial fibrillation that is extremely symptomatic and refractory to medical management, atrioventricular node ablation and pacemaker implantation is used as a last resort.[1,2]

Summary/Conclusions

The patient presented to clinic with fatigue, a common presentation of atrial fibrillation in the elderly. On physical exam, her irregularly irregular pulse suggested atrial fibrillation. A single EKG confirmed the diagnosis. Subsequently, she was started on rivaroxaban (a NOAC) for anticoagulation, which was appropriate as she had a CHADS2 score of 1 (age >75) or a 2.8% risk of an event per year. She was also placed on metoprolol (a beta blocker) for rate control. Since she was largely asymptomatic, rhythm control was not attempted. The management of this patient was confused by the absence of atrial fibrillation in her second and third visits to the clinic. It is difficult to estimated he duration and frequency of her arrhythmia. Without the presence of atrial fibrillation the beta-blocker may be unnecessary, especially as it lowers the patients pulse rate well below the 100 bpm target, and is used primarily for symptomatic relief. Another thing to consider is whether to continue oral anticoagulation. The patient takes a benzodiazepine which has been linked to increased falls in the elderly and increases her risk of a serious bleed.[7,8] Unfortunately this risk factor is not included in the HASBLED score. The patient should continue to be monitored for atrial fibrillation, as it is a major risk for stroke in elderly patients and would indicate a need to continue oral anticoagulation. If the patient remains in sinus rhythm it may be appropriate to discontinue the oral anticoagulation. Without the presence of atrial fibrillation it is likely that the patients risk of a stroke would fall below her risk of a major bleed while taking oral anticoagulation.

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