Antithrombotic Therapy for Elderly Patients with Atrial Fibrillation Who Are at Risk for Falls

Man-Son-Hing M, Nichol G, Lau A, Laupacis A. Choosing antithrombotic therapy for elderly patients with atrial fibrillation who are at risk for falls. Arch Intern Med 1999; 159:677-85.

Clinical question **Should the risk of falling influence the choice of antithrombotic therapy in elderly patients with atrial fibrillation?**

Background The benefits of warfarin therapy in stroke prevention have been demonstrated in other trials.[1] Warfarin therapy is not without risk, and clinicians are especially concerned about adverse outcomes when prescribing warfarin to elderly patients at risk of falling. Each year, approximately one third of community-living elderly persons experience a fall.[2]

Population studied This analysis used selected patients from prospective cohort studies that evaluated the efficacy of antithrombotic therapy in patients with atrial fibrillation. Patients were 65 years of age or older with atrial fibrillation, at risk for falling, and did not have any contraindications to antithrombotic therapy.

Study design and validity This was a Markov decision analysis intended to determine whether the choice of antithrombotic therapy in patients who are at risk of falling influences the development of subdural hematoma. Decision analyses involve choosing an action after formally and logically weighing the risks and benefits of the alternatives. The risks and benefits, expressed as probabilities, are obtained from other studies. The decision analysis had to weigh the various outcomes that are important to patients. The value that is assigned to a particular outcome is its "utility."

Probabilities for the major outcomes (stroke, transient ischemic events, reversible ischemic neurological deficits and non–central nervous system bleeding) were obtained for the patient population. The probability of SDH was obtained from different population studies in which patients received no therapy, aspirin, or warfarin. Since it is an infrequent occurrence in trials, outcome data for subdural hematoma (SDH) were obtained from consecutive case series.

Since data were not available, the percent of fatal outcomes in the aspirin group was assumed to be equivalent to that of patients who received no therapy. Utilities for the disability associated with stroke and the use of aspirin and warfarin were derived from a literature report. The authors assigned these utilities to the mild, moderate, and major disability states used in the decision analysis.

This decision analysis was appropriately constructed and used the best data currently available, and problems with the analysis are few. The analysis did not account for adverse effects due to warfarin or detrimental effects of falling other than SDH (significant morbidity and mortality are associated with both falling and with warfarin therapy.) Also, the authors did not explain what criteria they used to categorize the states of disability as mild, moderate, or major.

Outcomes measured The primary outcome measured was SDH; none of the outcomes except SDH exhibited a possible causal relationship. Results were expressed in quality-adjusted life expectancy years. No information was given regarding the tool used to determine quality.

Results Quality-adjusted life expectancy was 12.9 years for patients receiving warfarin therapy, 11.17 years for patients receiving aspirin therapy, and 10.15 years for those receiving no therapy. A sensitivity analysis was performed, confirming warfarin as the optimal therapy. For warfarin to not be the preferred therapy, people with an average fall risk must have a 535-fold greater risk of SDH compared with those who do not fall. The significance of these differences was not evaluated.

A subgroup analysis of patients aged older than 75 years was conducted. Probabilities for risk factors were tripled to estimate a worst-case scenario. Warfarin therapy remained the preferred intervention. Quality-adjusted life expectancy was 7 years with warfarin, 6.5 years with aspirin, and 6.8 years with no therapy.

Recommendations for clinical practice **This decision analysis supports the use of warfarin therapy in the prevention of stroke even in elderly patients at risk for falls. The outcome used as the basis for this recommendation was the incidence of SDH resulting from falls in patients on warfarin therapy compared with patients taking aspirin or no therapy. The decision to initiate warfarin therapy in the elderly should be made on the basis of careful individual examination of the patient and thorough assessment of the patient's risk factors for adverse events. Concern about falls, however, should not automatically disqualify a patient from receiving warfarin.**

Melinda Wellman, PharmD
Andrew C. Martin, PharmD
University of Utah Hospitals and Clinics
E-mail: MELINDA.WELLMAN@hsc.utah.edu

REFERENCES

1. Atrial Fibrillation Investigators. Atrial fibrillation: risk factors for embolization and efficacy of antithrombotic therapy. Arch Intern Med 1997; 157:1237-40.

2. Tinetti ME, Speechly M, Ginter SF. Risk factors for falling amongst elderly persons living in the community. N Engl J Med 1988; 319:1701-7.