Availability of patient decision aids for stroke prevention in atrial fibrillation: A systematic review

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Background Atrial fibrillation is a common irregular heart rhythm that increases patients' risk of stroke. Aspirin, warfarin, direct oral anticoagulants, and an implantable device can reduce this risk. Given the availability of multiple comparable options, this decision depends on patient preferences and is appropriate for the use of decision aids and other efforts to promote shared decision making. The objective of this review was to examine the existence and accessibility of, as well as select outcomes associated with, published, formally evaluated patient decision aids for stroke prevention in atrial fibrillation.

Methods Six databases were searched from inception to March 2016 with a research librarian. Two authors independently reviewed potential articles, selected trials meeting inclusion criteria, and assessed outcome measures. Outcomes included patient knowledge, involvement, choice, and decisional conflict.

Results The search resulted in 666 articles; most were excluded for not examining stroke prevention in atrial fibrillation and 7 studies were eventually included. Six decision aids displayed combinations of aspirin, warfarin, or no therapy; 1 included a direct oral anticoagulant. Interventions were associated with increased patient knowledge, increased likelihood of making a choice, and low decisional conflict. Use of decision aids in this review was associated with less selection of warfarin. None of the tested decision aids are currently available.

Discussion Published patient decision aids for stroke prevention in atrial fibrillation are not accessible for clinical use. Given the availability of multiple comparable options, there is a need to develop and test new patient decision aids in this context. (Am Heart J 2017;191:1-11.)

Atrial fibrillation affects more than 5 million Americans,[1] with increasing prevalence due to its association with aging.[2,3] The risk of stroke is high in the setting of atrial fibrillation,[4-6] and most strokes in this population (91%) are caused by thrombi that originate in the left atrial appendage (LAA).[7] Patients at increased risk for stroke who have atrial fibrillation are recommended to take a blood thinner to reduce that risk.[8] Warfarin is effective at stroke reduction but also increases risk of bleeding, negatively interacts with some medications, and requires regular blood tests. These limitations lead to challenges in dosing and adherence, especially among the elderly.[9-13] Alternative comparable therapies, including direct oral anticoagulants (DOACs) and an LAA closure device (WATCHMAN; Boston Scientific Corp, Marlborough, MA), are now available.[14-17] Given low prescription and inconsistent compliance with pharmacologic options, as well as the availability of comparable stroke prevention strategies, patient preferences play an essential role in this decision. Decision aids and other efforts to promote shared decision making (SDM) may be appropriate to optimize communication around the risks and benefits of the choices and incorporate patient preferences into the final treatment decision.[18,19]

Shared decision making involves an open exchange of information where clinicians share the risks and benefits of the available choices and patients discuss their values and preferences around the presented options. Together, "through an interactive process of reflection and discussion," clinicians and patients come to consensus on a plan.[20] Most decision aids are tools to help patients understand their medical options; few are designed for clinicians to deliver in the visit.[21,22] Decision aids are associated with outcomes such as increased patient

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knowledge and involvement as well as improved decisional quality.[23] Decision aids may help facilitate a departure from traditional paternalistic models of medicine, and instead encourage open discussion where clinicians and patients explore benefits and tradeoffs together while weighing preferred treatment options with best available evidence.

The Centers for Medicare and Medicaid Services, in the decision memorandum around reimbursement for LAA closure devices, calls for performance and documentation of SDM by nonimplanting physicians with "evidence-based decision tools."[24] In this systematic review, we sought to report the existence of, as well as select outcomes associated with, published, formally evaluated patient decision aids for the choice of stroke prevention strategy in the setting of atrial fibrillation.

Methods

This review was conducted according to the "preferred reporting items for systematic reviews and meta-analyses" (PRISMA) statement and guidelines.[25] The PICOS categories, as defined by the PRISMA statement, are as follows: *P*articipants, all patients; *I*nterventions, decision aids displaying therapeutic options for stroke prevention designed to aid decision making for patients with atrial fibrillation; *C*omparators, usual care, control, or different formats of the intervention; *O*utcomes, measured patient-centered outcomes such as patient knowledge, involvement, choice, or decisional conflict; and *S*tudy design, trials (randomized or nonrandomized) of decision aids with patients.

Search strategy

Studies were identified through a librarian-guided search of 6 online literature databases from inception through March 2016: MEDLINE via PubMed (1946 to March 28, 2016), CINAHL (1981 to March 28, 2016), PsychINFO (1806 to March 28, 2016), Web of Science (1900 to March 28, 2016), Cochrane CENTRAL (Issue 2 of 12, February 2016), and the Cochrane Database of Systematic Reviews (Issue 3 of 12, March 2016) (Appendix 1). Keywords and medical subject heading terms included the following: atrial fibrillation, decision aid, decision tool, decision support, and shared decision making. Search terms were stratified and combined by theme (1. atrial fibrillation and 2. interventions to aid decision making). Themes were then combined to produce relevant literature without limits or language restrictions. Studies written in English that evaluated patient decision aids for stroke prevention in atrial fibrillation were included. Interventions were decision aids of any format displaying treatment options for stroke prevention in atrial fibrillation and associated data around outcomes, risks, and benefits. Titles and abstracts were independently screened by 2 authors (E.O., S.G.), and studies were excluded according to a priori criteria displayed in Figure 1. Literature identified for full-text review was examined for final eligibility by at least 2 authors (E.O., S.G.), and reference lists of relevant articles were appraised for additional studies to review. Disagreement was resolved by consensus among all authors.

We conducted a further search of decision aids available online for universities, nonprofit and for-profit organizations, and the public using search terms such as "atrial fibrillation decision aid" and "decision aids for stroke prevention in atrial fibrillation" entered in Google and hospital Web sites. We evaluated decision aids available through the Ottawa Hospital Research Institute (OHRI) (https://decisionaid.ohri.ca/), an international online resource for decision aids. We contacted authors of available tools and accessed e-mail listservs of research organizations to identify additional resources. Authors were not asked to validate data abstraction, methods, or results, but rather to determine the availability of the interventions tested in the included trials.

Data abstraction and outcome assessment

Data abstraction was completed independently by 2 authors (E.O., S.G.) and data was entered directly into Table I, which was used as the data collection form. Authors determined if the decision was "hypothetical" via inclusion of volunteers rather than "actual" patients with atrial fibrillation making a real-time decision around anticoagulation therapy.

Studies were assessed for a selection of metrics generally evaluated in decision aid trials[23]: patient knowledge, patient involvement, choice, and decisional conflict (a measure of patients' certainty that their health care decisions match their values and preferences).[26] Patient knowledge assessments evaluated general knowledge about atrial fibrillation, stroke, and the risks and benefits of treatment options displayed in the interventions. Authors were contacted regarding availability of the interventions. Given the qualitative methods of our reporting and the disparate nature of the interventions, formal quantitative analyses (summary measures, meta-analyses, etc) were not performed. Randomized trials were assessed for risk of bias independently by 2 authors (E.O., S.G.) using the Cochrane Collaboration's "Risk of Bias" assessment tool.[27] Discrepancies were resolved through discussion and consensus.

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Results

Literature search and study selection

A total of 666 unique citations were found and underwent title and abstract examination; 14 articles