University Hospitals Bristol NHS
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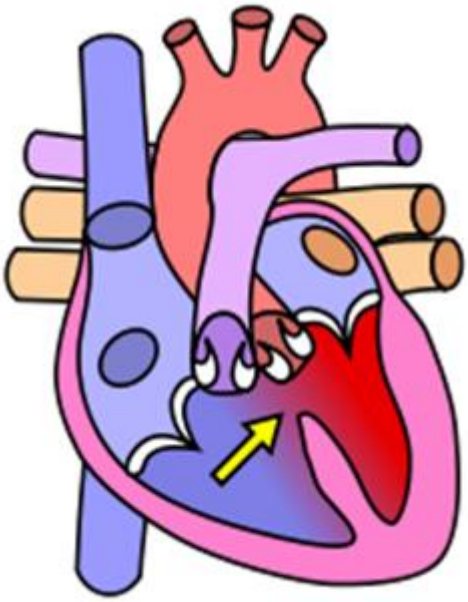
Cardiac Nurses: Arrythmia

Evidence Update



August 2017

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Lunchtime Drop-in Sessions

All sessions last one hour

August (12.00-13.00)

4th (Fri) Critical Appraisal
9th (Wed) Literature Searching
15th (Tues) Interpreting Statistics
24th (Thurs) Critical Appraisal

September (13.00-14.00)

1st (Fri) Literature Searching
4th (Mon) Critical Appraisal
12th (Tues) Statistics
20th (Wed) Literature Searching
28th (Thu) Critical Appraisal

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Contents

New Additions to NICE, The Cochrane Library, and UpToDate®

NICE National Institute for Health and Care Excellence

Adult patient decision-making regarding implantation of complex cardiac devices: a scoping review

Source: PubMed - 01 June 2017 - Publisher: European Journal Of Cardiovascular Nursing : Journal Of The Working Group On Cardiovascular Nursing Of The European Society Of Cardiology

BACKGROUND: Complex cardiac rhythm management device (CRMD) therapy provides an important treatment...for people at risk of sudden cardiac death. Despite the survival...primary or secondary sudden cardiac death prevention devices...

Cochrane Library

Nothing new to add

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

Overview of atrial fibrillation

Author: Kapil Kumar, MD; Section Editor: Peter J Zimetbaum, MD;
Deputy Editor: Gordon M Saperia, MD, FACC

Contributor Disclosures

All topics are updated as new evidence becomes available and our peer review process is complete.
Literature review current through: Jun 2017. | **This topic last updated:** Jun 20, 2017.

INTRODUCTION — Atrial fibrillation (AF) is the most common cardiac arrhythmia that has the following electrocardiographic characteristics (see "The electrocardiogram in atrial fibrillation", section on 'Common findings'):

- The RR intervals follow no repetitive pattern. They have been labeled as "irregularly irregular."
- While electrical activity suggestive of P waves is seen in some leads, there are no distinct P waves. Thus, even when an atrial cycle length (the interval between two atrial activations or the P-P interval) can be defined, it is not regular and often less than 200 milliseconds (translating to an atrial rate greater than 300 beats per minute).

AF can have adverse consequences related to a reduction in cardiac output and to atrial and atrial appendage thrombus formation [1-4]. In addition, affected patients may be at increased risk for mortality. (See 'Long-term outcome'below.)

AF is more prevalent in men and with increasing age (figure 1) [5]. (See "Epidemiology of and risk factors for atrial fibrillation", section on 'Epidemiology'.)

This topic will provide a broad overview of AF, including the management of the patient. The reader will be referred to more detailed discussions when appropriate.

RISK FACTORS AND DISEASE ASSOCIATIONS — Hypertensive heart disease and coronary heart disease (CHD) are the most common underlying disorders in patients with atrial fibrillation (AF) in developed countries. Rheumatic heart disease, although now uncommon in developed countries, is associated with a much higher incidence of AF. (See "Epidemiology of and risk factors for atrial fibrillation", section on 'Chronic disease associations'.)

PATHOGENESIS — Irrespective of the underlying risk factor(s), changes in the electrophysiology of the atrial myocardium are likely important. The pathophysiology of atrial fibrillation (AF) is discussed in detail elsewhere. (See "Epidemiology of and risk factors for atrial fibrillation", section on 'Pathogenesis' and "Mechanisms of atrial fibrillation", section on 'Basic atrial electrophysiology'.)

NONVALVULAR VERSUS VALVULAR HEART DISEASE — Patients with atrial fibrillation may or may not have valvular heart disease. This issue is of particular importance in choosing antithrombotic therapy; it is discussed in detail elsewhere. (See "Atrial fibrillation: Anticoagulant therapy to prevent embolization", section on 'Patients with valvular heart disease'.)

Atrial fibrillation: Risk of embolization

Authors: Warren J Manning, MD; Daniel E Singer, MD
Section Editors: Peter J Zimetbaum, MD; Scott E Kasner, MD
Deputy Editor: Gordon M Saperia, MD, FACC

Contributor Disclosures

All topics are updated as new evidence becomes available and our peer review process is complete.
Literature review current through: Jun 2017. | **This topic last updated:** May 23, 2017.

INTRODUCTION — The most serious common complication of atrial fibrillation (AF) is arterial thromboembolism; the most clinically evident thromboembolic event is ischemic stroke. (See "Initial assessment and management of acute stroke" and "Pathophysiology of ischemic stroke".)

Peripheral embolization accounts for less than 10 percent of all such events and many of these are subclinical [1-3]. Knowledge of the risk of stroke (and peripheral embolization) is important for two reasons: to help the patient better understand AF and its potential complications; and, more importantly, to help determine which patients might benefit from interventions to prevent thromboembolism.

Antithrombotic therapy with oral anticoagulant has been shown to lower the risk of clinical thromboembolism in virtually all patients with AF, including all levels of risk and irrespective of type (paroxysmal, persistent, or permanent). (See "Overview of atrial fibrillation", section on 'General classification'.)

However, in the lowest-risk patients, the risk and impact of anticoagulant-related major bleeding may equal or exceed those of clinical thromboembolism without anticoagulant therapy. Thus, for these lowest-risk patients, clinicians need guidance regarding when to recommend such therapy. Risk prediction models have been developed for this purpose, although each has significant limitations. We prefer the CHA_2DS_2-VASc model and will focus on it in this topic. (See 'Options for estimating risk in the individual patient' below.)

The individual predictors and the models used to predict embolic risk in patients with nonvalvular AF are discussed in this topic. The way in which the risk models are used in clinical decision making regarding antithrombotic therapy is discussed separately. (See "Atrial fibrillation: Anticoagulant therapy to prevent embolization", section on 'Clinical use of anticoagulants'.)

Current Awareness Database

Below is a selection of articles recently added to the healthcare databases.

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Atrial fibrillation, inherited channelopathies, cardiac resynchronisation therapy

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1. 1.4 times increase in atrial fibrillation-related ischemic stroke and TIA over 12years in a stroke center.

Author(s): Yang, Qiong; Churilov, Leonid; Fan, Dongsheng; Davis, Stephen; Yan, Bernard

Source: Journal of the neurological sciences; Aug 2017; vol. 379 ; p. 1-6

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28716216

Abstract:BACKGROUND AND PURPOSEPrevalence of atrial fibrillation (AF) has quadrupled in the past 50years in the general population. However, there is uncertainty regarding prevalence of AF over time in ischemic stroke patients given the aging population and enhanced surveillance of AF. We aimed to explore the changing prevalence of AF as well as other risk factors, stroke subtypes, investigations and pre-stroke medications among ischemic stroke and transient ischemic attack (TIA) patients.METHODSWe performed a retrospective analysis of data from a prospective database of consecutive patients with acute ischemic stroke and TIA from 2004 to 2015. Trends in risk factors and other variables year by year were analyzed using logistic regression or median regression.RESULTSAmong 6275 patients (median age [interquartile range] 74 [62-82] years, 56% males), the prevalence of AF increased 1.4 times over 12years (from 23.3% to 32.7%, P<0.001). The increase in the prevalence of AF remained significant after adjustment for age and the use of Holter monitoring. There was also a significant increase in prevalence of hypertension (67.4% to 77.3%), structural heart disease (9.8% to 10.5%), and previous TIA (10.9% to 13.7%) and a significant decrease in prevalence of dyslipidemia (71.8% to 49.4%).CONCLUSIONSThere was a 1.4 times increase in the prevalence of AF among consecutive ischemic stroke and TIA patients in the past 12years in a hospital-based registry. More active screening of the general population for AF may be warranted in order to decrease the overall stroke burden.

Database: Medline

2. Risk of arterial and venous thromboembolism in patients with atrial fibrillation or flutter: A nationwide population-based cohort study.

Author(s): Sundbøll, Jens; Hováth-Puhó, Erzsébet; Adelborg, Kasper; Ording, Anne; Schmidt, Morten; Bøtker, Hans Erik; Sørensen, Henrik Toft

Source: International journal of cardiology; Aug 2017; vol. 241 ; p. 182-187

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28473169

Abstract:BACKGROUNDPatients with atrial fibrillation or flutter (AFF) are at increased risk of ischemic stroke, but their risk of other thromboembolic events remains less clear.METHODSDuring 2004-2013, we conducted a nationwide population-based cohort study using Danish medical registries. We identified all patients with first-time AFF and sampled a sex-, age-, and calendar year-matched general population comparison cohort without AFF. For myocardial infarction, peripheral embolism, ischemic stroke, hemorrhagic stroke, deep venous thrombosis, and pulmonary embolism, we computed cumulative risks and adjusted incidence rate ratios (aIRRs) adjusted for comorbidity and medication.RESULTSThe study population consisted of 103,989 patients with AFF and 519,935 individuals without AFF from the general population. Ten-year cumulative risks in the AFF cohort were 3.5% for myocardial infarction, 0.5% for peripheral embolism, 6.7%

for ischemic stroke, 1.3% for hemorrhagic stroke, 1.0% for deep venous thrombosis, and 1.3% for pulmonary embolism. During the first 30days following AFF, aIRRs were markedly (4 to 16-fold) increased for all outcomes and similarly elevated for myocardial infarction (aIRR=8.0, 95% confidence interval (CI): 6.8-9.5) and ischemic stroke (aIRR=9.9, 95% CI: 8.5-11.5). Thereafter, aIRRs decreased gradually, reaching unity after 5years for myocardial infarction, deep venous thrombosis, and pulmonary embolism, but remained 1.6 to 3.5-fold increased for peripheral embolism, ischemic stroke, and hemorrhagic stroke.CONCLUSIONSAFF was a risk factor for all arterial and venous outcomes during the first year of follow-up, but only for peripheral embolism, ischemic stroke, and hemorrhagic stroke thereafter.

Database: Medline

3. Examining the impact of active clearance of chest drainage catheters on postoperative atrial fibrillation.

Author(s): St-Onge, Samuel; Ben Ali, Walid; Bouhout, Ismail; Bouchard, Denis; Lamarche, Yoan; Perrault, Louis P; Demers, Philippe

Source: The Journal of thoracic and cardiovascular surgery; Aug 2017; vol. 154 (no. 2); p. 501-508

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28724233

Abstract:OBJECTIVEPostoperative atrial fibrillation (POAF) is one of the most frequent complications encountered after heart surgery, and significantly increases complications and mortality. An obstructed chest tube, leaving unevacuated blood around the heart and lungs, can lead to atrial inflammation, which can trigger POAF. The aim of this study was to assess the effectiveness of chest drainage incorporating an active tube clearance (ATC) system in reducing the rate of POAF.METHODSThis retrospective analysis based on 300 consecutive patients undergoing heart surgery compared 142 patients allocated to an ATC drainage protocol with 158 controls managed with standard chest drainage. Using a 1:1 propensity score match, 214 patients were included in paired analysis (107 in each group). The primary endpoint was POAF.RESULTSUnmatched patients managed with ATC chest drainage protocol had a reduction of 34% in their POAF rate compared with those managed with standard drains (23% vs 35%, P = .01). In the matched cohort, ATC was associated with a reduction of 31% in the rate of POAF (24% vs 35%, P = .09) and a trend toward shorter postoperative length of stay (5.0 [4.0; 7.0] vs 6.0 [5.0; 8.0], P = .08). In multivariable analysis, chest drainage with ATC showed a protective effect on POAF with odds ratio of 0.5 (95% confidence interval, 0.1-0.9; P = .02).CONCLUSIONSThe use of an ATC chest drainage protocol may be associated with reduced POAF. Our results suggest that efforts to maintain chest tube patency could be useful to reduce the incidence of POAF.

Database: Medline

4. New-onset postoperative atrial fibrillation after aortic valve replacement: Effect on long-term survival.

Author(s): Swinkels, Ben M; de Mol, Bas A; Kelder, Johannes C; Vermeulen, Freddy E; Ten Berg, Jurriën M

Source: The Journal of thoracic and cardiovascular surgery; Aug 2017; vol. 154 (no. 2); p. 492-498

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28390762

Abstract:OBJECTIVEThere is a paucity of data on long-term survival of new-onset postoperative atrial fibrillation (POAF) after cardiac surgery. Also, mean follow-up in previous studies is confined to a maximum of one decade. This retrospective, longitudinal cohort study was performed to determine the effect on long-term survival of new-onset POAF after aortic valve replacement (AVR) over a mean follow-up of almost 2 decades.METHODSKaplan-Meier survival analysis was used to determine long-term survival after AVR, performed between January 1, 1990, and January 1, 1994, in 569 consecutive patients without a history of atrial fibrillation, divided into 241 patients (42.4%) with and 328 patients (57.6%) without new-onset POAF. New-onset POAF was considered in multivariable analysis for decreased long-term survival. After AVR, patients with new-onset POAF were treated with the aim to restore sinus rhythm within 24 to 48 hours from onset by medication and when medication failed by direct-current cardioversion before discharge home.RESULTSMean follow-up after AVR was 17.8 ± 1.9 years. Incidence of new-onset POAF was 42.4%. Kaplan-Meier overall cumulative survival rates at 15 years of follow-up were similar in the patients with new-onset POAF versus those without: 41.5% (95% confidence interval [CI], 35.2-47.7) versus 41.3% (95% CI, 36.0-46.7), respectively. New-onset POAF was not an independent risk factor for decreased long-term survival (hazard ratio 0.815; 95%

CI, 0.663-1.001; P = .052).CONCLUSIONSNew-onset POAF after AVR does not affect long-term survival when treatment is aimed to restore sinus rhythm before discharge home.

Database: Medline

5. Psoriasis increases risk of new-onset atrial fibrillation: a systematic review and meta-analysis of prospective observational studies.

Author(s): Upala, Sikarin; Shahnawaz, Afeefa; Sanguankeo, Anawin

Source: The Journal of dermatological treatment; Aug 2017; vol. 28 (no. 5); p. 406-410

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 27794626

Abstract:BACKGROUNDPsoriasis is a common chronic immune-mediated dermatological disease that increases the risk of cardiovascular disease. We conducted a systematic review and meta-analysis to evaluate the association between psoriasis and atrial fibrillation from prospective observational studies.METHODSA comprehensive search of the databases of the MEDLINE and EMBASE was performed from inception through November 2015. The inclusion criterion was the prospective observational study that assessed the risk of new-onset atrial fibrillation in adults with psoriasis. Outcome was the adjusted hazard ratio (HR) of atrial fibrillation comparison between patients with psoriasis and controls. Pooled HR and 95% confidence intervals (CI) were calculated using a random-effects model.RESULTSThe initial search yielded 176 articles. Fifteen articles underwent full-length review and data were extracted from 4 observational studies. Incidence of atrial fibrillation was ascertained by cardiologist-reviewed electrocardiograms. There was a significant increased risk of new-onset atrial fibrillation in patients with psoriasis compared to controls with a pooled HR 1.42 (95%CI 1.22-1.65).CONCLUSIONOur meta-analysis of prospective studies demonstrated that patients with psoriasis have increased risk of new-onset atrial fibrillation. Future interventional studies addressing the impact of psoriasis treatment and prevention of atrial fibrillation should be performed.

Database: Medline

6. Predictors of arrhythmia recurrence after balloon cryoablation of atrial fibrillation: the value of CAAP-AF risk scoring system.

Author(s): Sanhoury, Mohamed; Moltrasio, Massimo; Tundo, Fabrizio; Riva, Stefania; Dello Russo, Antonio; Casella, Michela; Tondo, Claudio; Fassini, Gaetano

Source: Journal of interventional cardiac electrophysiology : an international journal of arrhythmias and pacing; Aug 2017; vol. 49 (no. 2); p. 129-135

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28417287

Abstract:PURPOSEIn the present study, we aimed to test the value of CAAP-AF score for prediction of atrial fibrillation (AF) recurrence at follow-up in a group of our patients treated by balloon cryoablation.METHODSA total of 283 symptomatic drug-refractory AF patients [261 (92%) with paroxysmal AF] who underwent pulmonary vein isolation (PVI) with second-generation cryoballoon between April 2012 and October 2016 were included. The CAAP-AF score was calculated for every patient.RESULTSA total of 283 patients [68 female (20%), mean age 59.8 ± 11.4 years] were included in the present analysis. Eighty-nine patients (31%) had hypertension and 13 (4%) had coronary artery disease. The mean left atrial diameter and left ventricular ejection fraction were 40.6 ± 7.0 mm and 60.0 ± 9.1%, respectively. The mean CHA2DS2-VASc score was 1.2 ± 1.1, and mean number of prior failed antiarrhythmic drugs was 1.4 ± 0.8. At 18 ± 6 months follow-up, 25 patients (8.87%) developed AF recurrence. The recurrence rate was as follows: 3.17% (score 0-3), 8.47% (score 4), 16.28% (score 5), 6.67% (score 6), 23.08% (score 7), and 36.36% (score ≥8). The recurrence rate was 4.86% at a score <5 and 16.49% at a value ≥5; a score cutoff ≥5 predicted AF recurrence with a sensitivity 64% and specificity 68%.CONCLUSIONSThe present analysis suggests the usefulness of CAAP-AF scoring system, with its simple and easily obtained six clinical variables, to predict AF recurrence after PVI by means of second-generation cryoballoon. A score value ≥5 predicted AF recurrence with a sensitivity 64% and specificity 68%.

Database: Medline

7. Initiation of anticoagulation in atrial fibrillation: which factors are associated with choice of anticoagulant?

Author(s): Gundlund, A; Staerk, L; Fosbøl, E L; Gadsbøll, K; Sindet-Pedersen, C; Bonde, A N; Gislason, G H; Olesen, J B

Source: Journal of internal medicine; Aug 2017; vol. 282 (no. 2); p. 164-174

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28480507

Abstract:BACKGROUNDThe use of non-vitamin K antagonist oral anticoagulants (NOACs) for stroke prophylaxis in atrial fibrillation (AF) is increasing rapidly. We compared characteristics of AF patients initiated on NOACs versus vitamin K antagonists (VKAs).METHODSUsing Danish nationwide registry data, we identified AF patients initiating either a VKA or a NOAC from 22 August 2011 until 30 September 2016. We compared patient characteristics including age, gender, comorbidities, concomitant pharmacotherapy and CHA2 DS2 -VASc and HAS-BLED scores in patients initiated on a VKA, dabigatran, rivaroxaban or apixaban. Differences were examined using multivariable logistic regression models.RESULTSThe study population comprised 51 981 AF patients of whom 19 989 (38.5%) were initiated on a VKA, 13 242 (25.5%) on dabigatran, 8475 (16.3%) on rivaroxaban and 10 275 (19.8%) on apixaban. Those patients initiated on apixaban had higher mean ± SD CHA2 DS2 -VASc scores than those initiated on a VKA (3.1 ± 1.6 vs. 2.9 ± 1.6). Those initiated on dabigatran had lower mean CHA2 DS2 -VASc scores (2.7 ± 1.6) than all other groups. Patients with a history of a prior stroke were significantly more likely to be initiated on a NOAC compared with a VKA [odds ratio (OR) 1.35, 95% confidence interval (CI) 1.28-1.43]. By contrast, patients with a history of myocardial infarction were less likely to be initiated on a NOAC compared with a VKA (OR 0.72, 95% CI 0.67-0.77).CONCLUSIONSAtrial fibrillation patients who were initiated on apixaban had higher stroke risk scores than patients initiated on VKAs. Interestingly, opposite results were found for dabigatran.

Database: Medline

8. Nonvitamin-K-antagonist oral anticoagulants versus warfarin in patients with atrial fibrillation and previous stroke or transient ischemic attack: An updated systematic review and meta-analysis of randomized controlled trials.

Author(s): Ntaios, George; Papavasileiou, Vasileios; Diener, Hans-Chris; Makaritsis, Konstantinos; Michel, Patrik

Source: International journal of stroke : official journal of the International Stroke Society; Aug 2017; vol. 12 (no. 6); p. 589-596

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 28730948

Abstract: Background In a previous systematic review and meta-analysis, we assessed the efficacy and safety of nonvitamin-K antagonist oral anticoagulants versus warfarin in patients with atrial fibrillation and stroke or transient ischemic attack. Since then, new information became available. Aim The aim of the present work was to update the results of the previous systematic review and meta-analysis. Methods We searched PubMed until 24 August 2016 for randomized controlled trials using the following search items: "atrial fibrillation" and "anticoagulation" and "warfarin" and "previous stroke or transient ischemic attack." Eligible studies had to be phase III trials in patients with atrial fibrillation comparing warfarin with nonvitamin-K antagonist oral anticoagulants currently on the market or with the intention to be brought to the market in North America or Europe. The outcomes assessed in the efficacy analysis included stroke or systemic embolism, stroke, ischemic or unknown stroke, disabling or fatal stroke, hemorrhagic stroke, cardiovascular death, death from any cause, and myocardial infarction. The outcomes assessed in the safety analysis included major bleeding, intracranial bleeding, and major gastrointestinal bleeding. We performed fixed effects analyses on intention-to-treat basis. Results Among 183 potentially eligible articles, four were included in the meta-analysis. In 20,500 patients, compared to warfarin, nonvitamin-K antagonist oral anticoagulants were associated with a significant reduction of stroke/systemic embolism (relative risk reduction: 13.7%, absolute risk reduction: 0.78%, number needed to treat to prevent one event: 127), hemorrhagic stroke (relative risk reduction: 50.0%, absolute risk reduction: 0.63%, number needed to treat: 157), any stroke (relative risk reduction: 13.1%, absolute risk reduction: 0.7%, number needed to treat: 142), and intracranial hemorrhage (relative risk reduction: 46.1%, absolute risk reduction: 0.88%, number needed to treat: 113) over 1.8-2.8 years. Conclusions This updated meta-analysis in

20,500 atrial fibrillation patients with previous stroke or transient ischemic attack shows that compared to warfarin non-vitamin-K antagonist oral anticoagulants are associated with a significant reduction of stroke, stroke or systemic embolism, hemorrhagic stroke, and intracranial bleeding.

Database: Medline

9. Guidelines on the management of atrial fibrillation in the emergency department: a critical appraisal.

Author(s): Costantino, Giorgio; Podda, Gian Marco; Falsetti, Lorenzo; Iannone, Primiano; Lages, Ana; Marra, Alberto M; Masala, Maristella; Reiakvam, Olaug Marie; Savva, Florentia; Schovanek, Jan; van Bree, Sjoerd; da Silva Chora, Inês João; Privitera, Graziella; Ragozzino, Silvio; von Rotz, Matthias; Woittiez, Lycke; Davidson, Christopher; Montano, Nicola

Source: Internal and emergency medicine; Aug 2017; vol. 12 (no. 5); p. 693-703

Publication Date: Aug 2017

Publication Type(s): Journal Article

PubMedID: 27905006

Abstract: Several guidelines often exist on the same topic, sometimes offering divergent recommendations. For the clinician, it can be difficult to understand the reasons for this divergence and how to select the right recommendations. The aim of this study is to compare different guidelines on the management of atrial fibrillation (AF), and provide practical and affordable advice on its management in the acute setting. A PubMed search was performed in May 2014 to identify the three most recent and cited published guidelines on AF. During the 1-week school of the European School of Internal Medicine, the attending residents were divided in five working groups. The three selected guidelines were compared with five specific questions. The guidelines identified were: the European Society of Cardiology guidelines on AF, the Canadian guidelines on emergency department management of AF, and the American Heart Association guidelines on AF. Twenty-one relevant sub-questions were identified. For five of these, there was no agreement between guidelines; for three, there was partial agreement; for three data were not available (issue not covered by one of the guidelines), while for ten, there was complete agreement. Evidence on the management of AF in the acute setting is largely based on expert opinion rather than clinical trials. While there is broad agreement on the management of the haemodynamically unstable patient and the use of drugs for rate-control strategy, there is less agreement on drug therapy for rhythm control and no agreement on several other topics.

Database: Medline

10. Effects of Non-Vitamin K Antagonist Oral Anticoagulants Versus Warfarin in Patients With Atrial Fibrillation and Valvular Heart Disease: A Systematic Review and Meta-Analysis.

Author(s): Pan, Kuo-Li; Singer, Daniel E; Ovbiagele, Bruce; Wu, Yi-Ling; Ahmed, Mohamed A; Lee, Meng

Source: Journal of the American Heart Association; Jul 2017; vol. 6 (no. 7)

Publication Date: Jul 2017

Publication Type(s): Journal Article Review

PubMedID: 28720644

Abstract:BACKGROUNDThe original non-vitamin K antagonist oral anticoagulant (NOAC) trials in nonvalvular atrial fibrillation (AF) enrolled patients with native valve pathologies. The object of this study was to quantify the benefit-risk profiles of NOACs versus warfarin in AF patients with native valvular heart disease (VHD).METHODS AND RESULTSTrials were identified by exhaustive literature search. Trial data were combined using inverse variance weighting to produce a meta-analytic summary hazard ratio (HR) and 95% confidence interval (CI) of efficacy and safety of NOACs versus warfarin. Our final analysis included 4 randomized controlled trials that enrolled 71 526 participants, including 13 574 with VHD. Pooling results from included trials showed that NOACs versus warfarin reduced stroke or systemic embolism (HR: 0.70; 95% CI, 0.60-0.82) and intracranial hemorrhage (HR: 0.47; 95% CI, 0.24-0.92) in AF patients with VHD. However, risk reduction of major bleeding and intracranial hemorrhage was driven by apixaban, edoxaban, and dabigatran (HR for major bleeding: 0.79 [95% CI, 0.69-0.91]; HR for intracranial hemorrhage: 0.33 [95% CI, 0.25-0.45]) but not rivaroxaban (HR for major bleeding: 1.56 [95% CI, 1.20-2.04]; HR for intracranial hemorrhage: 1.27 [95% CI, 0.77-2.10]).CONCLUSIONSAmong patients with AF and native VHD, NOACs reduce stroke and systemic embolism compared with warfarin. Evidence shows that apixaban, dabigatran, and edoxaban also reduce bleeding in this patient subgroup, whereas major bleeding (but not intracranial hemorrhage or mortality rate) is significantly increased in VHD patients treated with rivaroxaban. NOACs are a reasonable alternative to warfarin in AF patients with VHD.

Database: Medline

11. Long-term antithrombotic treatment in intracranial hemorrhage survivors with atrial fibrillation.

Author(s): Korompoki, Eleni; Filippidis, Filippos T; Nielsen, Peter B; Del Giudice, Angela; Lip, Gregory Y H; Kuramatsu, Joji B; Huttner, Hagen B; Fang, Jiming; Schulman, Sam; Martí-Fàbregas, Joan; Gathier, Celine S; Viswanathan, Anand; Biffi, Alessandro; Poli, Daniela; Weimar, Christian; Malzahn, Uwe; Heuschmann, Peter; Veltkamp, Roland

Source: Neurology; Jul 2017

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28724590

Available in full text at Neurology - from Ovid

Abstract:OBJECTIVETo perform a systematic review and meta-analysis of studies reporting recurrent intracranial hemorrhage (ICH) and ischemic stroke (IS) in ICH survivors with atrial fibrillation (AF) during long-term follow-up.METHODSA comprehensive literature search including MEDLINE, EMBASE, Cochrane library, clinical trials registry was performed following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. We considered studies capturing outcome events (ICH recurrence and IS) for ≥3 months and treatment exposure to vitamin K antagonists (VKAs), antiplatelet agents (APAs), or no antithrombotic medication (no-ATM). Corresponding authors provided aggregate data for IS and ICH recurrence rate between 6 weeks after the event and 1 year of follow-up for each treatment exposure. Meta-analyses of pooled rate ratios (RRs) were conducted with the inverse variance method.RESULTSSeventeen articles met inclusion criteria. Seven observational studies enrolling 2,452 patients were included in the meta-analysis. Pooled RR estimates for IS were lower for VKAs compared to APAs (RR = 0.45, 95% confidence interval [CI] 0.27-0.74, p = 0.002) and no-ATM (RR = 0.47, 95% CI 0.29-0.77, p = 0.002). Pooled RR estimates for ICH recurrence were not significantly increased across treatment groups (VKA vs APA: RR = 1.34, 95% CI 0.79-2.30, p = 0.28; VKA vs no-ATM: RR = 0.93, 95% CI 0.45-1.90, p = 0.84).CONCLUSIONSIn observational studies, anticoagulation with VKA is associated with a lower rate of IS than APA or no-ATM without increasing ICH recurrence significantly. A randomized controlled trial is needed to determine the net clinical benefit of anticoagulation in ICH survivors with AF.

Database: Medline

12. Real-World Setting Comparison of Nonvitamin-K Antagonist Oral Anticoagulants Versus Vitamin-K Antagonists for Stroke Prevention in Atrial Fibrillation: A Systematic Review and Meta-Analysis.

Author(s): Ntaios, George; Papavasileiou, Vasileios; Makaritsis, Konstantinos; Vemmos, Konstantinos; Michel, Patrik; Lip, Gregory Y H

Source: Stroke; Jul 2017

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28716982

Abstract:BACKGROUND AND PURPOSEEvidence from the real-world setting complements evidence coming from randomized controlled trials. We aimed to summarize all available evidence from high-quality real-world observational studies about efficacy and safety of nonvitamin-K oral anticoagulants compared with vitamin-K antagonists in patients with atrial fibrillation.METHODSWe searched PubMed and Web of Science until January 7, 2017 for observational nationwide or health insurance databases reporting matched or adjusted results comparing nonvitamin-K oral anticoagulants versus vitamin-K antagonists in patients with atrial fibrillation. Outcomes assessed included ischemic stroke, ischemic stroke or systemic embolism, any stroke or systemic embolism, myocardial infarction, intracranial hemorrhage, major hemorrhage, gastrointestinal hemorrhage, and death.RESULTSIn 28 included studies of dabigatran, rivaroxaban, and apixaban compared with vitamin-K antagonists, all 3 nonvitamin-K oral anticoagulants were associated with a large reduction of intracranial hemorrhage (apixaban hazard ratio [HR], 0.45; 95% confidence interval [CI], 0.31-0.63; dabigatran HR, 0.42; 95% CI, 0.37-0.49; rivaroxaban HR, 0.64; 95% CI, 0.47-0.86); similar rates of ischemic stroke and ischemic stroke or systemic embolism (apixaban HR, 1.05; 95% CI, 0.75-1.19 and HR, 1.08; 95% CI, 0.95-1.22 / dabigatran HR, 0.96; 95% CI, 0.80-1.16 and HR, 1.17; 95% CI, 0.92-1.50 / rivaroxaban HR, 0.89; 95% CI, 0.76-1.04 and HR, 0.73; 95% CI, 0.52-1.04, respectively); apixaban and dabigatran with lower mortality (HR, 0.65; 95% CI, 0.56-0.75 and HR, 0.63; 95% CI, 0.53-0.75, respectively); apixaban with fewer gastrointestinal

(HR, 0.63; 95% CI, 0.42-0.95) and major hemorrhages (HR, 0.55; 95% CI, 0.48-0.63); dabigatran and rivaroxaban with more gastrointestinal hemorrhages (HR, 1.20; 95% CI, 1.06-1.36 and HR, 1.24; 95% CI, 1.08-1.41, respectively); dabigatran and rivaroxaban with similar rate of myocardial infarction (HR, 0.96; 95% CI, 0.77-1.21 and HR, 1.02; 95% CI, 0.54-1.89, respectively).CONCLUSIONSThis meta-analysis confirms the main findings of the randomized controlled trials of dabigatran, rivaroxaban, and apixaban in the real-world setting and, hence, strengthens their validity.

Database: Medline

13. Intracerebral haemorrhage risk in microbleed-positive ischaemic stroke patients with atrial fibrillation: Preliminary meta-analysis of cohorts and anticoagulation decision schema.

Author(s): Charidimou, Andreas; Boulouis, Gregoire; Shams, Sara; Calvet, David; Shoamanesh, Ashkan; International META-MICROBLEEDS Initiative

Source: Journal of the neurological sciences; Jul 2017; vol. 378 ; p. 102-109

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28566143

Abstract:INTRODUCTIONWhether ischaemic stroke patients with atrial fibrillation (AF) and cerebral microbleeds (CMBs) on MRI can be safely anticoagulated is a hotly debated topic. We performed a systematic review and meta-analysis of published aggregate data, to investigate the risk of subsequent intracerebral haemorrhage (ICH) based on CMBs presence in this stroke population, generally considered for oral anticoagulation. We also suggest a decision-making schema for anticoagulation use in this setting.METHODSWe searched PubMed for relevant observational studies. Random effects models with DerSimonian-Laird weights were used to investigated the association between CMBs presence at baseline MRI and ICH or ischaemic stroke during follow-up.RESULTSFour studies, with slightly heterogeneous design, including 990 ischaemic stroke patients were pooled in a meta-analysis (crude CMBs prevalence: 25%; 95%CI: 17%-33%). The median follow-up ranged between 17 and 37months. The future symptomatic ICH rate was 1.6% (16/990), while recurrent ischaemic stroke rate was 5.9% (58/990). Baseline CMB presence was associated with increased risk of symptomatic ICH during follow-up compared to patients without CMBs (OR: 4.16; 95%CI: 1.54-11.25; p=0.005). There was no association between CMBs presence and recurrent ischaemic stroke risk.CONCLUSIONWe have shown that the presence of CMBs in cohorts of ischaemic stroke patients, most with AF on warfarin, is associated with a 4-fold increase in subsequent ICH (but not ischaemic stroke) risk (Class III evidence). These pooled estimates are useful for future trials design. We propose a simple data-driven anticoagulation schema which awaits validation and refinement as new prospective data are accumulated.

Database: Medline

14. Risk of major bleeding in patients with non-valvular atrial fibrillation treated with oral anticoagulants: a systematic review of real-world observational studies.

Author(s): Deitelzweig, S; Farmer, C; Luo, X; Vo, L; Li, X; Hamilton, M; Horblyuk, R; Ashaye, A

Source: Current medical research and opinion; Jul 2017 ; p. 1-12

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28644048

Abstract:OBJECTIVETo conduct a systematic review of real-world (RWD) studies comparing the risk of major bleeding (MB) among patients with non-valvular atrial fibrillation (NVAF) on direct oral anticoagulants (DOACs) or warfarin.METHODSMEDLINE, Embase, NHS-EED, and EconLit were searched for RWD studies published between January 2003 and November 2016 comparing MB risk among DOACs and warfarin. Proceedings of clinical conferences from 2012 to 2016 were reviewed.RESULTSA total of 4218 citations were identified, 26 of which met eligibility criteria. Most studies were retrospective analyses of administrative claims databases and patient registries (n = 23 of 26); about half were based in the United States (n = 15). Apixaban showed a significantly lower risk of MB versus warfarin in all eight included studies. MB risk was either significantly lower (n = 9 of 16) or not significantly different (n = 7 of 16) between dabigatran and warfarin; there was no significant difference between rivaroxaban and warfarin in all seven included studies. The risk was significantly lower with apixaban versus rivaroxaban (n = 7 of 7) but not significantly different from dabigatran (n = 6 of 7). MB risk was significantly lower (n = 3 of 4) or not significantly different (n = 1 of 4) with dabigatran versus rivaroxaban. No evidence was identified for edoxaban.CONCLUSIONDOACs were

associated with similar or lower risks of MB versus warfarin. A lower MB risk was consistently observed for apixaban, but less consistently for dabigatran; MB risk was similar between rivaroxaban and warfarin. Among DOACs, the risk of MB with apixaban was consistently lower than with rivaroxaban, but similar to dabigatran.

Database: Medline

15. Risk analysis of new oral anticoagulants for gastrointestinal bleeding and intracranial hemorrhage in atrial fibrillation patients: a systematic review and network meta-analysis.

Author(s): Xu, Wei-Wei; Hu, Shen-Jiang; Wu, Tao

Source: Journal of Zhejiang University. Science. B; Jul 2017; vol. 18 (no. 7); p. 567-576

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28681581

Available in full text at Journal of Zhejiang University. Science. B - from National Library of Medicine

Abstract:BACKGROUNDAntithrombotic therapy using new oral anticoagulants (NOACs) in patients with atrial fibrillation (AF) has been generally shown to have a favorable risk-benefit profile. Since there has been dispute about the risks of gastrointestinal bleeding (GIB) and intracranial hemorrhage (ICH), we sought to conduct a systematic review and network meta-analysis using Bayesian inference to analyze the risks of GIB and ICH in AF patients taking NOACs.METHODSWe analyzed data from 20 randomized controlled trials of 91 671 AF patients receiving anticoagulants, antiplatelet drugs, or placebo. Bayesian network meta-analysis of two different evidence networks was performed using a binomial likelihood model, based on a network in which different agents (and doses) were treated as separate nodes. Odds ratios (ORs) and 95% confidence intervals (CIs) were modeled using Markov chain Monte Carlo methods.RESULTSIndirect comparisons with the Bayesian model confirmed that aspirin+clopidogrel significantly increased the risk of GIB in AF patients compared to the placebo (OR 0.33, 95% CI 0.01-0.92). Warfarin was identified as greatly increasing the risk of ICH compared to edoxaban 30 mg (OR 3.42, 95% CI 1.22-7.24) and dabigatran 110 mg (OR 3.56, 95% CI 1.10-8.45). We further ranked the NOACs for the lowest risk of GIB (apixaban 5 mg) and ICH (apixaban 5 mg, dabigatran 110 mg, and edoxaban 30 mg).CONCLUSIONSBayesian network meta-analysis of treatment of non-valvular AF patients with anticoagulants suggested that NOACs do not increase risks of GIB and/or ICH, compared to each other.

Database: Medline

16. Bleeding risk of antiplatelet drugs compared with oral anticoagulants in older patients with atrial fibrillation: a systematic review and meta-analysis.

Author(s): Melkonian, M; Jarzebowski, W; Pautas, E; Siguret, V; Belmin, J; Lafuente-Lafuente, C

Source: Journal of thrombosis and haemostasis : JTH; Jul 2017; vol. 15 (no. 7); p. 1500-1510

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28393461

Abstract: Essentials Hemorrhagic risk of antiplatelet drugs is generally thought to be lower than anticoagulants. We systematically reviewed trials comparing antiplatelet and anticoagulant drugs in older patients. Overall, the risk of major bleeding was similar with antiplatelet and with anticoagulant drugs. In elderly patients, risks and benefits of antiplatelet drugs should be carefully weighted.SUMMARYBackground The hemorrhagic risk of antiplatelet drugs in older patients could be higher than is usually assumed. Objective To compare the bleeding risk of antiplatelet drugs and oral anticoagulants in elderly patients. Methods We carried out a systematic review and meta-analysis. We searched PubMed, EMBASE and the Cochrane Library up to January 2016 for randomized and non-randomized controlled trials (RCTs) and parallel cohorts comparing antiplatelet drugs and oral anticoagulants in patients aged 65 years or older. Two independent authors assessed studies for inclusion. The pooled relative risk (RR) of major bleeding was estimated using a random model. Results Seven RCTs (4550 patients) and four cohort studies (38 649 patients) met the inclusion criteria. The risk of major bleeding when on aspirin or clopidogrel was equal to that when on warfarin in RCTs (RR, 1.01; 95% confidence interval (95% CI), 0.69-1.48; moderate-quality evidence), lower than when on warfarin in non-randomized cohort studies (RR, 0.87; 95% CI, 0.77-0.99; low-quality evidence) and not different when all studies were combined (RR, 0.86; 95% CI, 0.73-1.01). Bleeding of any severity (RR, 0.70; 95% CI, 0.57-0.86) and intracranial bleeding (RR, 0.46; 95% CI, 0.30-0.73) were less frequent with antiplatelet drugs than with warfarin. All-cause mortality

was similar (RR, 0.99). Subgroup analysis suggested that major bleeding might be higher with warfarin than with aspirin in patients over 80 years old. Conclusion Elderly patients treated with aspirin or clopidogrel suffer less any-severity bleeding but have a risk of major bleeding similar to that of oral anticoagulants, with the exception of intracranial bleeding.

Database: Medline

17. Impact of targeting adenosine-induced transient venous reconnection in patients undergoing pulmonary vein isolation for atrial fibrillation: a meta-analysis of 3524 patients.

Author(s): Blandino, Alessandro; Biondi-Zoccai, Giuseppe; Battaglia, Alberto; Grossi, Stefano; Bianchi, Francesca; Conte, Maria Rosa; Rametta, Francesco; Gaita, Fiorenzo

Source: Journal of cardiovascular medicine (Hagerstown, Md.); Jul 2017; vol. 18 (no. 7); p. 478-489

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28514791

Abstract:AIMSAtrial fibrillation recurrences after pulmonary vein isolation (PVI) are not uncommon and are frequently related to pulmonary vein reconnection. Adenosine/ATP can reveal dormant pulmonary vein conduction after PVI. Previous studies revealed that adenosine-guided Additional ablation could improve arrhythmia-free survival. We performed a meta-analysis to assess the impact of additional ablation to eliminate adenosine-induced transient pulmonary vein reconnection in terms of atrial fibrillation recurrence at follow-up.METHODSMEDLINE/PubMed, Cochrane Library and references reporting atrial fibrillation ablation and adenosine/ATP-following PVI were screened, and studies were included if they matched inclusion and exclusion criteria.RESULTSA total of 3524 patients were enrolled with a median follow-up of 13 (6-20) months. Overall, 70% (60-85) of patients in ATP-guided ablation vs. 63% (48-79) in no ATP-guided ablation were free of atrial fibrillation at follow-up. Pooled results revealed that ATP-guided ablation reduced the risk of atrial fibrillation recurrence of 42% [odds ratio (OR) 0.58, 0.41-0.81], but this result was primary because of the contribution of retrospective over-randomized studies [OR 0.48 (0.35-0.65) vs. 0.76 (0.42-1.40), respectively]. 3.2% of patients experienced an adverse event. ATP-guided ablation is related to a nonsignificant increase in fluoroscopy time (OR 1.71, 0.98-2.96) and to a significant increase in procedure time (OR 2.84, 1.32-6.09).CONCLUSIONAdditional ablation aiming to eliminate adenosine-induced transient pulmonary vein reconnection failed to reduce the risk of atrial fibrillation recurrence at follow-up. Moreover, although adenosine-guided PVI is not affected by an augmented risk of adverse events, it is associated with a NS increased fluoroscopy exposure and significantly longer procedure duration. Further studies are required to identify the actual role of adenosine in PVI.

Database: Medline

18. Rationale and design of the Apixaban for the Reduction of Thrombo-Embolism in Patients With Device-Detected Sub-Clinical Atrial Fibrillation (ARTESiA) trial.

Author(s): Lopes, Renato D; Alings, Marco; Connolly, Stuart J; Beresh, Heather; Granger, Christopher B; Mazuecos, Juan Benezet; Boriani, Giuseppe; Nielsen, Jens C; Conen, David; Hohnloser, Stefan H; Mairesse, Georges H; Mabo, Philippe; Camm, A John; Healey, Jeffrey S

Source: American heart journal; Jul 2017; vol. 189 ; p. 137-145

Publication Date: Jul 2017

Publication Type(s): Journal Article

PubMedID: 28625370

Abstract:BACKGROUNDDevice-detected subclinical atrial fibrillation (AF) refers to infrequent, short-lasting, asymptomatic AF that is detected only with long-term continuous monitoring. Subclinical AF is common and associated with an increased risk of stroke; however, the risk of stroke with subclinical AF is lower than for clinical AF, and very few patients with subclinical AF alone have been included in large AF anticoagulation trials. The net benefit of anticoagulation in patients with subclinical AF is unknown.DESIGNARTESiA is a prospective, multicenter, double-blind, randomized controlled trial, recruiting patients with subclinical AF detected by an implanted pacemaker, defibrillator, or cardiac monitor, and who have additional risk factors for stroke. Patients with clinical AF documented by surface electrocardiogram will be excluded from the study. Participants will be randomized to receive either apixaban (according to standard AF dosing) or aspirin 81mg daily. The primary outcome is the composite of stroke, transient ischemic attack with diffusion-weighted magnetic resonance imaging evidence of cerebral infarction, and systemic embolism. Approximately 4,000

patients will be enrolled from around 230 clinical sites, with an anticipated mean follow-up of 36months until 248 adjudicated primary outcome events have occurred.SUMMARYARTESiA will determine whether oral anticoagulation therapy with apixaban compared with aspirin reduces the risk of stroke or systemic embolism in patients with subclinical AF and additional risk factors.

Database: Medline

19. Treating Specialty and Outcomes in Newly Diagnosed Atrial Fibrillation: From the TREAT-AF Study.

Author(s): Perino, Alexander C.; Fan, Jun; Schmitt, Susan K.; Askari, Mariam; Kaiser, Daniel W.; Deshmukh, Abhishek; Heidenreich, Paul A.; Swan, Christopher; Narayan, Sanjiv M.; Wang, Paul J.; Turakhia, Mintu P.

Source: Journal of the American College of Cardiology (JACC); Jul 2017; vol. 70 (no. 1); p. 78-86

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28662810

Abstract: Background: Atrial fibrillation (AF) occurs in many clinical contexts and is diagnosed and treated by clinicians across many specialties. This approach has resulted in treatment variations.Objectives: The goal of this study was to evaluate the association between treating specialty and AF outcomes among patients newly diagnosed with AF.Methods: Using data from the TREAT-AF (Retrospective Evaluation and Assessment of Therapies in AF) study from the Veterans Health Administration, patients with newly diagnosed, nonvalvular AF between 2004 and 2012 were identified who had at least 1 outpatient encounter with primary care or cardiology within 90 days of the AF diagnosis. Cox proportional hazards regression was used to evaluate the association between treating specialty and AF outcomes.Results: Among 184,161 patients with newly diagnosed AF (age 70 ± 11 years; 1.7% women; CHA2DS2-VASc score 2.6 ± 1.7), 40% received cardiology care and 60% received primary care only. After adjustment for covariates, cardiology care was associated with reductions in stroke (hazard ratio [HR]: 0.91; 95% confidence interval [CI]: 0.86 to 0.96; $p < 0.001$) and death (HR: 0.89; 95% CI: 0.88 to 0.91; $p < 0.0001$) and increases in hospitalizations for AF/supraventricular tachycardia (HR: 1.38; 95% CI: 1.35 to 1.42; $p < 0.0001$) and myocardial infarction (HR: 1.03; 95% CI: 1.00 to 1.05; $p < 0.04$). The propensity-matched cohort had similar results. In mediation analysis, oral anticoagulation prescription within 90 days of diagnosis may have mediated reductions in stroke but did not mediate reductions in survival.Conclusions: In patients with newly diagnosed AF, cardiology care was associated with improved outcomes, potentially mediated by early prescription of oral anticoagulation therapy. Although hypothesis-generating, these data warrant serious consideration and study of health care system interventions at the time of new AF diagnosis.

Database: CINAHL

20. Appropriateness of Oral Anticoagulants for the Long-Term Treatment of Atrial Fibrillation in Older People: Results of an Evidence-Based Review and International Consensus Validation Process (OAC-FORTA 2016).

Author(s): Wehling, Martin; Collins, Ronan; Gil, Victor; Hanon, Olivier; Hardt, Roland; Hoffmeister, Martin; Monteiro, Pedro; Quinn, Terence; Ropers, Dieter; Sergi, Giuseppe; Verheugt, Freek

Source: Drugs & Aging; Jul 2017; vol. 34 (no. 7); p. 499-507

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: Background: Age appropriateness of anticoagulants for stroke prevention in atrial fibrillation is uncertain. Objective: To review oral anticoagulants for the treatment of atrial fibrillation in older (age >65 years) people and to classify appropriate and inappropriate drugs based on efficacy, safety and tolerability using the Fit-fOR-The-Aged (FORTA) classification. Methods: We performed a structured comprehensive review of controlled clinical trials and summaries of individual product characteristics to assess study and total patient numbers, quality of major outcome data and data of geriatric relevance. The resulting evidence was discussed in a round table with an interdisciplinary panel of ten European experts. Decisions on age appropriateness were made using a Delphi process. Results: For the eight drugs included, 380 citations were identified. The primary outcome results were reported in 32 clinical trials with explicit and relevant data on older people. Though over 24,000 patients aged >75/80 years were studied for warfarin, data on geriatric syndromes were rare (two studies reporting on frailty/falls/mental status) and missing for all other compounds. Apixaban was rated FORTA-A (highly beneficial). Other non-vitamin K antagonist oral anticoagulants (including low/high-intensity dabigatran

and high-intensity edoxaban) and warfarin were assigned to FORTA-B (beneficial). Phenprocoumon, acenocoumarol and fluindione were rated FORTA-C (questionable), mainly reflecting the absence of data. Conclusions: All non-vitamin K antagonist oral anticoagulants and warfarin were classified as beneficial or very beneficial in older persons (FORTA-A or -B), underlining the overall positive assessment of the risk/benefit ratio for these drugs. For other vitamin-K antagonists regionally used in Europe, the lack of evidence should challenge current practice.

Database: CINAHL

21. Optimal image reconstruction using multidetector-row computed tomography to facilitate cardiac resynchronization therapy.

Author(s): Izawa, Yu; Mori, Shumpei; Nishii, Tatsuya; Matsuzoe, Hiroki; Imada, Hiroshi; Suehiro, Hideya; Nakayama, Kazuhiko; Matsumoto, Kensuke; Tanaka, Hidekazu; Fujiwara, Sei; Fukuzawa, Koji; Hirata, Ken-ichi

Source: Echocardiography; Jul 2017; vol. 34 (no. 7); p. 1073-1076

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: Preprocedural recognition of the segment of latest mechanical contraction along with the anatomy of the coronary venous system is important for successful and effective cardiac resynchronization therapy. We present a case of ischemic cardiomyopathy who underwent implantation of a cardiac resynchronization therapy device with a defibrillator, which was facilitated by preprocedural computed tomographic images reconstructed to visualize the left ventricular slab and the coronary venous system simultaneously on the cardiac contour. The present reconstruction method using computed tomography is optimal and feasible method to incorporate the echocardiographic findings into the procedure performed under fluoroscopy appropriately.

Database: CINAHL

22. Prevalence and Predictors of Early Heart Failure With Preserved Ejection Fraction in Patients With Paroxysmal Atrial Fibrillation.

Author(s): Meluzin, Jaroslav; Starek, Zdenek; Kulik, Tomas; Jez, Jiri; Lehar, Frantisek; Wolf, Jiri; Dusek, Ladislav; Leinveber, Pavel; Novak, Miroslav

Source: Journal of Cardiac Failure; Jul 2017; vol. 23 (no. 7); p. 558-562

Publication Date: Jul 2017

Publication Type(s): Academic Journal

PubMedID: 28408305

Abstract: Background: Patients with atrial fibrillation (AF) have an increased risk of diastolic dysfunction and heart failure. The purpose of this study was to identify independent predictors of early (ie, only exercise-induced) heart failure with preserved ejection fraction (HFpEF) and to describe the prevalence of early HFpEF among patients with paroxysmal AF.Methods and Results: One hundred patients with paroxysmal AF and preserved left ventricular ejection fraction (LVEF) underwent catheterization for left atrial pressure (LAP) measurements at rest and at the peak of arm exercise (LAP-exe). Based on resting and exercise LAP values, the patients were divided into 3 groups. Sixty-one patients had no evidence of HFpEF (LAP at rest ≤15 mm Hg, LAP-exe 15 mm Hg). Multivariate exact logistic regression analysis identified age ≥58 years, LAP at rest ≥11 mm Hg, and peak systolic mitral annular velocity ≤9.3 cm/s to be independent predictors of early HFpEF.Conclusions: In patients with paroxysmal AF and preserved LVEF, there appears to be a clinically significant prevalence of early HFpEF.

Database: CINAHL

23. Catheter ablation for the treatment of atrial fibrillation is associated with a reduction in health care resource utilization.

Author(s): Samuel, Michelle; Avgil Tsadok, Meytal; Joza, Jacqueline; Behlouli, Hassan; Verma, Atul; Essebag, Vidal; Pilote, Louise

Source: Journal of Cardiovascular Electrophysiology; Jul 2017; vol. 28 (no. 7); p. 733-741

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: Background Catheter ablation (CA) is superior to antiarrhythmic therapy at reducing recurrence of atrial fibrillation (AF); however, there are limited data regarding whether this decrease translates into a reduction in health care resource utilization. Objective To evaluate the impact of AF ablation on long-term health care resource utilization. Methods A population-based cohort was constructed to include patients who underwent CA for AF in Quebec, Canada, between April 2005 and March 2011. Resource utilization was evaluated 24 months pre- and postindex CA procedure. Results In a cohort of 1,556 patients, resource utilization increased progressively over the 24-month period leading to index CA (P for trend <0.05 for hospitalizations, ER visits, outpatient visits, cardioversions, and echocardiograms). After index CA, all-cause hospitalizations, hospitalizations for AF, ER visits, cardioversions, and echocardiograms were reduced 12 months post-CA compared to 12 months prior (all-cause hospitalizations 0.8-0.6 per patient per year; hospitalizations for AF 0.4-0.3; ER visits 2.9-1.8; cardioversions 0.5-0.2; echocardiograms 0.8-0.5; P < 0.05 for all trends). Resource utilization continued to decline at 24 months post-CA (vs. 12 months prior) for all-cause hospitalizations (0.4), cardioversions (0.1), and echocardiograms (0.3) (per patient year; P < 0.05 for all trends). Conclusion In conclusion, the pattern of increasing health care resource utilization preceding CA for AF reverses after CA to lower than preablation levels up to 24 months post-CA.

Database: CINAHL

24. Atrial fibrillation patients with isolated pulmonary veins: Is sinus rhythm achievable?

Author(s): Szilágyi, Judit; Marcus, Gregory M.; Badhwar, Nitish; Lee, Byron K.; Lee, Randall J.; Vedantham, Vasanth; Tseng, Zian H.; Walters, Tomos; Scheinman, Melvin; Olgin, Jeffrey; Gerstenfeld, Edward P.

Source: Journal of Cardiovascular Electrophysiology; Jul 2017; vol. 28 (no. 7); p. 754-761

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: Background The cornerstone of atrial fibrillation (AF) ablation is isolation of the pulmonary veins (PVs). Patients with recurrent AF undergoing repeat ablation usually have PV reconnection (PVr). The ablation strategy and outcome of patients undergoing repeat ablation who have persistent isolation of all PVs (PVi) at the time of repeat ablation is unknown. Methods and results We studied consecutive patients with recurrent AF undergoing repeat ablation and compared patients with PVi to those with PVr. One hundred fifty-two patients underwent repeat ablation, and of these, 25 patients (16.4%) had PVi. Patients with PVi underwent ablation targeting any isoproterenol induced AF triggers, atrial substrate, or inducible atrial tachycardias or flutters. Patients with PVi compared to PVr were more likely to have a history of persistent AF (64% vs. 26%; P < 0.0001), obesity (BMI 30.4 vs. 28.2; P = 0.05), and prior use of contact force sensing catheters (28% vs. 0.8%, P < 0.0001). After a mean follow-up of 19 ± 15 months, 56% of PVi patients remained in sinus rhythm compared to 76.3% of PVr patients (P = 0.036). In a multivariable model, PVi patients and those with cardiomyopathy had a higher risk of recurrent atrial tachyarrhythmias (HR = 3.6 95%, CI 1.6-8.3, P = 0.002 and HR = 6.2, 95% CI 2.3-16.3, P < 0.0001, respectively). Conclusion In patients who have all PVs isolated at the time of the redo AF ablation, a strategy of targeting non-PV AF triggers and inducible flutters can still lead to AF freedom in more than half of patients. Patients with PVr, however, have a better long-term outcome.

Database: CINAHL

25. Impact of treatment crossovers on clinical outcomes in the rate and rhythm control strategies for atrial fibrillation: Insights from the AFFIRM (Atrial Fibrillation Follow-up Investigation of Rhythm Management) trial.

Author(s): Maan, Abhishek; Zhang, Zheng; Qin, Ziling; Wang, Yanbing; Dudley, Samuel; Dabhadakar, Kaustubh; Refaat, Marwan; Mansour, Moussa; Ruskin, Jeremy N.; Heist, E. Kevin

Source: Pacing & Clinical Electrophysiology; Jul 2017; vol. 40 (no. 7); p. 770-778

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: We investigated the rates and reasons for crossover to alternative treatment strategies and its impact on mortality in patients who were enrolled in the Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) trial. Over a mean follow-up period of 3.5 years, 842 patients underwent crossover to the alternative treatment arms in AFFIRM. The rate of crossover from rhythm to rate control (594/2,033, 29.2%) was more frequent than the rate of crossover from rate to rhythm control (248/2,027, 12.2%, P < 0.0001). The leading reasons for crossover from rhythm to rate control were failure to achieve or maintain sinus rhythm (272/594, 45.8%) and intolerable adverse effects (122/594, 20.5%). In comparison, the major reasons for

crossover from rate to rhythm control were failure to control atrial fibrillation symptoms (159/248, 64.1%) and intolerable adverse effects (9/248, 3.6%). This difference in crossover pattern was statistically significant (P < 0.0001). There was a significantly decreased risk of all-cause mortality (adjusted HR: 0.61, 95% CI: 0.48-0.78, P < 0.0001) and cardiac mortality (adjusted hazard ratio [HR]: 0.61, 95% confidence interval [CI]: 0.43-0.88, P = 0.008) in the subgroup of patients who crossed over from rhythm to rate control as compared to those who continued in rhythm control. There was a nonsignificant trend toward decreased all-cause (adjusted HR: 0.76, 95% CI: 0.53-1.10, P = 0.14) and cardiac mortality (adjusted HR: 0.70, 95% CI: 0.42-1.18, P = 0.18) in patients who crossed over from rate to rhythm control as compared to those who continued rate control.

Database: CINAHL

26. Extremely low-frame-rate digital fluoroscopy in catheter ablation of atrial fibrillation: A comparison of 2 versus 4 frame rate.

Author(s): Lee, Ji Hyun; Kim, Jun; Kim, Minsu; Hwang, Jongmin; Hwang, You Mi; Kang, Joon-Won; Nam, Gi-Byoung; Choi, Kee-Joon; Kim, You-Ho

Source: Medicine; Jun 2017; vol. 96 (no. 24); p. e7200

Publication Date: Jun 2017

Publication Type(s): Comparative Study Journal Article Evaluation Studies

PubMedID: 28614264

Abstract: Despite the technological advance in 3-dimensional (3D) mapping, radiation exposure during catheter ablation of atrial fibrillation (AF) continues to be a major concern in both patients and physicians. Previous studies reported substantial radiation exposure (7369-8690 cGy cm) during AF catheter ablation with fluoroscopic settings of 7.5 frames per second (FPS) under 3D mapping system guidance. We evaluated the efficacy and safety of a low-frame-rate fluoroscopy protocol for catheter ablation for AF.Retrospective analysis of data on 133 patients who underwent AF catheter ablation with 3-D electro-anatomic mapping at our institute from January 2014 to May 2015 was performed. Since January 2014, fluoroscopy frame rate of 4-FPS was implemented at our institute, which was further decreased to 2-FPS in September 2014. We compared the radiation exposure quantified as dose area product (DAP) and effective dose (ED) between the 4-FPS (n=57) and 2-FPS (n=76) groups.The 4-FPS group showed higher median DAP (599.9 cGy cm; interquartile range [IR], 371.4-1337.5 cGy cm vs. 392.0 cGy cm; IR, 289.7-591.4 cGy cm; P<.01), longer median fluoroscopic time (24.4 min; IR, 17.5-34.9 min vs. 15.1 min; IR, 10.7-20.1 min; P<.01), and higher median ED (1.1 mSv; IR, 0.7-2.5 mSv vs. 0.7 mSv; IR, 0.6-1.1 mSv; P<.01) compared with the 2-FPS group. No major procedure-related complications such as cardiac tamponade were observed in either group. Over follow-up durations of 331±197 days, atrial tachyarrhythmia recurred in 20 patients (35.1%) in the 4-FPS group and in 27 patients (35.5%) in the 2-FPS group (P=.96). Kaplan-Meier survival analysis revealed no significant different between the 2 groups (log rank, P=.25).In conclusion, both the 4-FPS and 2-FPS settings were feasible and emitted a relatively low level of radiation compared with that historically reported for DAP in a conventional fluoroscopy setting.

Database: Medline

27. Efficacy and safety of traditional Chinese medicine on thromboembolic events in patients with atrial fibrillation: A systematic review and meta-analysis.

Author(s): Wang, Zhangsheng; Tang, Zeng; Zhu, Wenqing; Ge, Lei; Ge, Junbo

Source: Complementary therapies in medicine; Jun 2017; vol. 32 ; p. 1-10

Publication Date: Jun 2017

Publication Type(s): Meta-analysis Journal Article Review

PubMedID: 28619293

Abstract:OBJECTIVESTraditional Chinese medicine (TCM) in combination with Western medicine (WM) has been widely used worldwide. This systematic review aimed to evaluate the efficacy and safety of TCM in prevention of thromboembolic events in patients with atrial fibrillation (AF).METHODSPotential studies were searched through the Cochrane Library, PubMed, EMBASE, CBM, VIP, CNKI, and Wanfang databases up to February 2016. Randomized controlled trials (RCTs) investigating the thromboembolic events and/or safety outcome of TCM in patients with AF were included.RESULTSA total of 905 AF patients from 9 RCTs were identified. Meta-analysis showed that TCM in combination with warfarin was better than warfarin alone for preventing total thromboembolic events with a 68% reduction of risk (risk ratio [RR] 0.32; 95% confidence interval [CI] 0.13-0.78) without increasing the risk of total bleeding (RR 0.71; 95% CI 0.29-1.72). Compared with warfarin, TCM therapy was associated with lower risk of total bleeding (RR 0.13; 95% CI 0.04-0.47), but

increased the risk of total thromboembolic events (RR 1.84; 95% CI 1.03-3.27).CONCLUSIONSThis meta-analysis suggests that TCM combined with warfarin is superior to warfarin alone for the prevention of total thromboembolic events in patients with AF, with equal risk of bleeding as warfarin alone.

Database: Medline

28. Effectiveness and Safety of Non-Vitamin K Antagonist Oral Anticoagulants for Atrial Fibrillation and Venous Thromboembolism: A Systematic Review and Meta-Analyses.

Author(s): Almutairi, Abdulaali R; Zhou, Lili; Gellad, Walid F; Lee, Jeannie K; Slack, Marion K; Martin, Jennifer R; Lo-Ciganic, Wei-Hsuan

Source: Clinical therapeutics; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article Review

PubMedID: 28668628

Abstract:PURPOSEThe findings from the observational studies comparing the effectiveness and safety of non-vitamin K antagonist oral anticoagulants (NOACs) versus vitamin K antagonists (VKAs) for atrial fibrillation (AF) and venous thromboembolism (VTE) are inconsistent. We conducted separate meta-analyses examining the efficacy/effectiveness and safety of NOACs versus VKAs by disease (AF vs VTE), study design (randomized controlled trials [RCTs] vs observational studies), and NOAC (dabigatran, rivaroxaban, apixaban, and edoxaban).METHODSThe main data sources included PubMed/MEDLINE, EMBASE, Web of Science, CINAHL, and Scopus from January 1, 2005, to February 15, 2016. We searched for Phase III RCTs and observational studies comparing NOACs versus VKAs. The primary outcomes were stroke/systemic embolism (SE) for AF; recurrent VTE/fatal pulmonary embolism (PE) for VTE; and major bleeding for both conditions. Secondary outcomes included stroke and myocardial infarction (MI) for AF, recurrent deep vein thrombosis (DVT)/PE for VTE, and mortality, intracranial hemorrhage (ICH), and gastrointestinal bleeding for both conditions. Pooled hazard ratios (HRs) were reported by using inverse variance-weighted random effects models.FINDINGSA total of 13 RCTs and 27 observational studies (AF, n = 32; VTE, n = 8) were included. For AF, dabigatran and VKAs were comparable for stroke/SE risk in 1 RCT (HR, 0.77 [95% CI, 0.57-1.03]) and 6 observational studies (HR, 1.03 [95% CI, 0.83-1.27]). Rivaroxaban had a 20% decreased risk of stroke/SE in 3 RCTs (HR, 0.80 [95% CI, 0.67-0.95]) compared with VKA, but the effect was nonsignificant in 3 observational studies (HR, 0.78 [95% CI, 0.59-1.04]). Apixaban decreased stroke/systemic embolism risk (HR, 0.79 [95% CI, 0.66-0.95]) compared with VKA in 1 RCT, but edoxaban was comparable to VKA (HR, 0.99 [95% CI, 0.77-1.28]) in 1 RCT (no observational studies available for apixaban/edoxaban). Dabigatran, apixaban, and edoxaban decreased the risk of hemorrhagic stroke, mortality, major bleeding, and ICH by 10% to 71% compared with VKAs but not rivaroxaban. For VTE, NOACs and VKAs were comparable for recurrent VTE/fatal PE/DVT/PE risk in 7 RCTs and 1 observational study. The 7 RCTs demonstrated a 32% to 69% decreased risk of major bleeding for dabigatran, rivaroxaban, and apixaban compared with VKAs. No difference was shown in 1 rivaroxaban observational study (HR, 0.77 [95% CI, 0.40-1.49]) and 1 edoxaban RCT (HR, 0.84 [95% CI, 0.59-1.20]). Except for dabigatran, the NOACs had a 61% to 86% decreased risk of ICH and gastrointestinal bleeding.IMPLICATIONSOverall, NOACs were comparable or superior to VKAs. Although no observational studies are currently available for apixaban/edoxaban, a few notable inconsistencies exist for dabigatran (ischemic stroke, MI) and rivaroxaban (stroke/SE, major bleeding in VTE) between RCTs and observational studies. Individualizing NOAC/VKA therapy based on benefit/safety profiles and patient characteristics is suggested.

Database: Medline

29. Magnesium status and magnesium therapy in cardiac surgery: A systematic review and meta-analysis focusing on arrhythmia prevention.

Author(s): Fairley, Jessica L; Zhang, Ling; Glassford, Neil J; Bellomo, Rinaldo

Source: Journal of critical care; Jun 2017; vol. 42 ; p. 69-77

Publication Date: Jun 2017

Publication Type(s): Journal Article Review

PubMedID: 28688240

Abstract:PURPOSETo investigate magnesium as prophylaxis or treatment of postoperative arrhythmias in cardiac surgery (CS) patients. To assess impact on biochemical and patient-centered outcomes.MATERIALS AND METHODSWe searched MEDLINE, CENTRAL and EMBASE electronic databases from 1975 to

October 2015 using terms related to magnesium and CS. English-Language RCTs were included involving adults undergoing CS with parenterally administered magnesium to treat or prevent arrhythmias, compared to control or standard antiarrythmics. We extracted incidence of postoperative arrhythmias, termination following magnesium administration and secondary outcomes (including mortality, length of stay, hemodynamic parameters, biochemistry).RESULTSThirty-five studies were included, with significant methodological heterogeneity. Atrial fibrillation (AF) was most commonly reported, followed by ventricular, supraventricular and overall arrhythmia frequency. Magnesium appeared to reduce AF (RR 0.69, 95% confidence interval (95%CI) 0.56-0.86, p=0.002), particularly postoperatively (RR 0.51, 95%CI 0.34-0.77, p=0.003) for longer than 24h. Maximal benefit was seen with bolus doses up to 60mmol. Magnesium appeared to reduce ventricular arrhythmias (RR=0.46, 95%CI 0.24-0.89, p=0.004), with a trend to reduced overall arrhythmias (RR=0.80, 95%CI 0.57-1.12, p=0.191). We found no mortality effect or significant increase in adverse events.CONCLUSIONSMagnesium administration post-CS appears to reduce AF without significant adverse events. There is limited evidence to support magnesium administration for prevention of other arrhythmias.

Database: Medline

30. Once- or twice-daily non-vitamin K antagonist oral anticoagulants in Asian patients with atrial fibrillation: A meta-analysis of randomized controlled trials.

Author(s): Wang, Kang-Ling; Chiu, Chun-Chih; Su-Yin Tan, Doreen; Lin, Chun-Yi; Lai, En-Yu; Goto, Shinya; Giugliano, Robert P; Chiang, Chern-En

Source: Journal of the Formosan Medical Association = Taiwan yi zhi; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28645443

Abstract:BACKGROUND/PURPOSENon-vitamin K antagonist oral anticoagulants (NOACs) have a half-life of around 12 h. We aimed to clarify if there was any effect modification by dosing (once- or twice-daily) regimens in Asian patients.METHODSPhase III randomized controlled trials of NOACs compared with warfarin in Asian patients with atrial fibrillation (AF) were identified and extracted from PubMed, CENTRAL, and CINAHL databases through November 2016. Outcomes were pooled by dosing regimens with the Mantel-Haenszel fixed-effects model. The risk ratio (RR) and 95% confidence interval (CI) were calculated. Effect differences between once- and twice-daily NOACs were assessed with Bucher indirect comparisons using common estimates, once heterogeneity was low, and with the Bayesian method.RESULTSFrom 6 trials, there was no effect modification by dosing regimens in the risk of stroke or systemic embolism across ethnicities (all interaction P > 0.05). Both dosing regimens were associated with a greater reduction in the risk of major bleeding in Asian patients (RR, 0.63 (95% CI, 0.47-0.85) and 0.57 (95% CI, 0.43-0.75), for once- and twice-daily NOACs, respectively). In Asian patients, risks of hemorrhagic stroke and intracranial hemorrhage were lower with once- (RR, 0.41 (95% CI, 0.21-0.80) and 0.29 (95% CI, 0.16-0.53)) and twice-daily NOACs (RR, 0.25 (95% CI, 0.12-0.51) and 0.38 (95% CI, 0.23-0.65)), compared with warfarin. There was no effect difference favoring any of NOAC regimens evaluated by Bucher and Bayesian methods.CONCLUSIONSIn Asian patients with AF, NOACs, regardless of dosing regimens, have a similar feature of preserved efficacy with improved safety compared with warfarin.

Database: Medline

31. Rationale and Design for a Randomized Comparison of Efficacy and Safety between Aspirin and Clopidogrel in Atrial Fibrillation Patients with Low Stroke Risk: CESAC-AF trial.

Author(s): Park, Sang Min; Jeong, Haemin; Jung, Mi-Hyang; Hong, Kyung Soon; Hong, Myeong-Ki; Bang, Chang Seok; Kim, Christopher Y

Source: Contemporary clinical trials; Jun 2017; vol. 60 ; p. 51-55

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28642210

Abstract:BACKGROUNDAtrial fibrillation (AF) increases the risk of thromboembolic stroke. An oral anticoagulant should be administrated to prevent stroke in patients with moderate stroke risk (ie, CHA2DS2-VASc score>2). If the stroke risk is low (i.e. the score=1), however, antiplatelet agent such as aspirin is widely used. Aspirin can cause peptic ulcer disease (PUD) while its alternative, clopidogrel, theoretically does not.OBJECTIVETo elucidate the efficacy and safety between aspirin and clopidogrel, a multicenter randomized

controlled trial was designed in AF patients with low stroke risk.METHODSAccording to sample size estimation based on previous literature, a total of 1560 AF patients with low stroke risk will be randomly assigned into 4 different groups dependent upon initial esophagogastroduodenoscopy (EGD) results: two mono-antiplatelet treatment groups with either aspirin 100mg or clopidogrel 75mg for 1year; two antiplatelet agent and proton pump inhibitor (PPI) combination groups. Follow-up EGD will be performed at 1year.RESULTSThe clinical follow-up will be performed for 1year after enrollment. The primary efficacy endpoint is to compare the annual stroke rate between aspirin and clopidogrel treatment groups. The primary safety endpoint is to compare the prevalence of drug-induced gastrointestinal (GI) and intracranial hemorrhage and upper-GI response including PUD based on EGD after 1year.CONCLUSIONSThis trial will determine whether clopidogrel is noninferior in stroke prevention and superior in reduction of GI events including PUD to aspirin in AF patients with low stroke risk. (ClinicalTrials.gov: NCT02960126).

Database: Medline

32. Atrial fibrillation as a prognostic indicator of myocardial infarction and cardiovascular death: a systematic review and meta-analysis.

Author(s): He, Wenqi; Chu, Yingjie

Source: Scientific reports; Jun 2017; vol. 7 (no. 1); p. 3360

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28611377

Available in full text at Scientific Reports - from ProQuest

Abstract: This study aimed to investigate whether atrial fibrillation (AF) predicts myocardial infarction (MI) or cardiovascular (CV) death. AF is a well-established risk factor for thrombotic stroke and all-cause mortality. PubMed, EmBase, and Cochrane Central were searched for articles comparing the incidence rates of MI, CV death, or CV events between AF and non-AF patients. Relative risk ratio (RR) was used as effect estimate. Crude and adjusted RRs were calculated. Data were pooled using a random-effects model. The meta-analysis included 27 studies. In the unadjusted analysis, AF patients had a nonsignificant trend toward a higher risk of MI compared with non-AF patients; however, a significant association was found. The crude data analysis showed that AF was associated with increased risk of CV death ($P < 0.05$) and CV events ($P < 0.05$). These associations remained significant after pooling data from adjusted models (CV death: RR = 1.95, 95% CI 1.51-2.51, $P < 0.05$; CV events: RR = 2.10, 95% CI 1.50-2.95, $P < 0.05$). These results showed that AF is an independent risk factor for MI, CV death, and CV events.

Database: Medline

33. Adenosine Testing After Atrial Fibrillation Ablation: Systematic Review and Meta-analysis.

Author(s): Wang, Nelson; Phan, Steven; Kanagaratnam, Aran; Kumar, Narendra; Phan, Kevin

Source: Heart, lung & circulation; Jun 2017

Publication Date: Jun 2017

Publication Type(s): Journal Article

PubMedID: 28655535

Abstract:BACKGROUNDAdenosine can be used to reveal dormant pulmonary vein (PV) conduction after pulmonary vein isolation (PVI) for the treatment of atrial fibrillation (AF). We performed a systematic review and meta-analysis to assess the impact of adenosine administration in patients undergoing PVI for AF.METHODSMeta-analysis of 22 studies was performed to assess the rates of freedom from AF in 1) patients with dormant PV conduction versus patients without dormant PV conduction, and 2) patients given routine adenosine post PVI versus patients not given adenosine. Relative-risks (RR) were calculated using random effects modelling.RESULTSIn 18 studies, 3,038 patients received adenosine and freedom from AF in those patients with dormant PV reconnection was significantly lower (62.9%) compared to patients without PV reconnection (67.2%) (RR 0.87; 95% CI: 0.78-0.98). In seven studies with 3,049 patients, the freedom from AF was significantly higher in patients who received adenosine (67%) versus those patients who did not receive adenosine (63%) (RR: 1.11; 95% CI: 1.01-1.22).CONCLUSIONSThe present study showed clear benefits of adenosine testing for freedom from AF recurrence. Adenosine-guided dormant conduction is associated with higher AF recurrence despite further ablation. Future studies should investigate the optimal methodology, including dosage and waiting time between PVI and adenosine administration.

Database: Medline

34. Effects of oral anticoagulant therapy in older medical in-patients with atrial fibrillation: a prospective cohort observational study.

Author(s): Bo, Mario; Li Puma, Federica; Badinella Martini, Marco; Falcone, Yolanda; Iacovino, Marina; Grisoglio, Enrica; Menditto, Elena; Fonte, Gianfranco; Brunetti, Enrico; Isaia, Giovanni; D'Ascenzo, Fabrizio; Gaita, Fiorenzo

Source: Aging Clinical & Experimental Research; Jun 2017; vol. 29 (no. 3); p. 491-497

Publication Date: Jun 2017

Publication Type(s): Academic Journal

Abstract: Background: Uncertainties about efficacy and safety of oral anticoagulant therapy (OAT) among older and frail medical patients with atrial fibrillation (AF) largely contribute to under-prescription of these drugs. Aims: In this prospective observational cohort study, we investigated mortality, and ischemic and hemorrhagic events, in hospital-discharged older patients with AF. Methods: Stroke and bleeding risk were evaluated using CHA2DS2-VASC and HAS-BLED scores. Comorbidity, frailty, cognitive and nutritional status and functional autonomy were evaluated using standardized scales. Independent associations between clinical variables, including OAT use, and all-cause mortality, fatal and non-fatal ischemic and hemorrhagic events, were evaluated. Further clinical outcomes comparison between patients treated with OAT and those untreated was performed after adjustment for significant differences in patient baseline characteristics with propensity score matching. Results: Of 452 patients included (mean age 81.6 years, 54.9 % women, roughly 30 % cognitively impaired and/or functionally dependent, mean CHA2DS2-VASC and HAS-BLED scores 4.6 and 2.8, respectively), 151 (33.4 %) died during a mean follow-up period of 300.5 days; ischemic and hemorrhagic stroke occurred in 4.0 and 0.4 % of patients, respectively, and major bleedings in 6.2 %. Discussion: After multivariate analysis, OAT at discharge was associated with lower overall mortality and reduced occurrence of ischemic stroke, the first finding being confirmed in propensity score matched analysis. Conclusions: Among older vulnerable AF patients with high post discharge death rate, OAT was associated, among other multiple factors, with reduced mortality and lower occurrence of ischemic stroke.

Database: CINAHL

35. Cardiac resynchronization therapy and its role in the management of heart failure.

Author(s): McAloon, Christopher J.; Theodoreson, Mark D.; Hayat, Sajad; Osman, Faizel

Source: British Journal of Hospital Medicine (17508460); Jun 2017; vol. 78 (no. 6); p. 312-319

Publication Date: Jun 2017

Publication Type(s): Academic Journal

Abstract: The prevalence of heart failure is increasing and it is associated with significant mortality and morbidity. Optimal medical therapy improves outcome, but heart failure continues to have a substantial impact on both the individual patient and wider society. Over the last two decades, cardiac resynchronization therapy has revolutionized the treatment of selected patients who have heart failure. Cardiac resynchronization therapy significantly reduces mortality and hospitalization through reverse cardiac remodelling. This review informs non-specialists about cardiac resynchronization therapy and for which patients it should be considered.

Database: CINAHL

36. Implantable Cardioverter Defibrillators for Primary Prevention of Mortality in Patients With Nonischemic Cardiomyopathy: A Meta-Analysis of Randomized Controlled Trials.

Author(s): STAVRAKIS, STAVROS; ASAD, ZAIN; REYNOLDS, DWIGHT

Source: Journal of Cardiovascular Electrophysiology; Jun 2017; vol. 28 (no. 6); p. 659-665

Publication Date: Jun 2017

Publication Type(s): Academic Journal

Abstract:ICD for Nonischemic Cardiomyopathy Background Implantable cardioverter defibrillators (ICDs) improve survival in patients with heart failure due to ischemic cardiomyopathy, but their benefit in nonischemic cardiomyopathy (NICM) has been recently questioned. We performed a meta-analysis of randomized clinical trials to examine the effect of ICDs on total mortality and arrhythmic death in patients with NICM. We also examined the impact of age and cardiac resynchronization therapy (CRT) on the relative effect of ICD

compared to control. Methods and Results We searched the MEDLINE and EMBASE databases for randomized trials evaluating the effect of ICD versus control in patients with NICM. Hazard ratios (HR) with 95% confidence interval (CI) were calculated using a random effects model. Six trials involving 2,967 patients were included (ICD, n = 1,553; control, n = 1,414). Based on the pooled estimate across the six studies, the use of ICD was associated with a significant reduction in total mortality (HR = 0.78, 95% CI 0.66-0.92; P = 0.003), as well as arrhythmic death (HR = 0.46, 95% CI 0.29-0.71; P = 0.0005) compared to control. ICD decreased total mortality in younger patients compared to control (HR = 0.63, 95% CI 0.46-0.86; P = 0.004), but not in older patients (HR = 0.97, 95% CI 0.56-1.68; P = 0.92). In patients with CRT, ICD reduced total mortality compared to control (HR = 0.78, 95% CI 0.65-0.95; P = 0.02), but not in patients with CRT (HR = 0.71, 95% CI 0.40-1.26). Conclusions ICDs decrease total mortality and arrhythmic deaths in patients with NICM. The benefit of ICD appears to be dependent on age and concomitant use of CRT.

Database: CINAHL

37. Randomized comparison of three guidewire insertion depths on incidence of arrhythmia during central venous catheterization.

Author(s): Lee, Jung-Man; Lee, Jiwon; Hwang, Jin-Young; Chang, Jee-Eun; Kim, Heyrim; Oh, Sohee; Oh, Eun-Ah; Min, Seong-Won

Source: The American journal of emergency medicine; May 2017; vol. 35 (no. 5); p. 743-748

Publication Date: May 2017

Publication Type(s): Comparative Study Randomized Controlled Trial Journal Article

PubMedID: 28132796

Available in full text at American Journal of Emergency Medicine, The - from ProQuest

Abstract:OBJECTIVEGuidewire-induced arrhythmias that occur during central venous catheterization can progress to malignant arrhythmias in rare cases. This study compared the incidence of arrhythmia during central venous catheterization using three different depths of guidewire insertion into the right internal jugular vein.METHODSSixty-nine patients undergoing elective surgery requiring central venous catheterization through the right internal jugular vein were enrolled in this double-blind, prospective, randomized, and controlled study. Patients were randomly allocated to receive guidewire insertions to 15cm, 17.5cm, or 20cm before tissue dilation. Arrhythmic episodes were then monitored during dilation of the soft tissue.RESULTSA total of 29 patients (42%) experienced arrhythmic episodes during tissue dilation. The guidewire-induced arrhythmia rates of the 15cm group, 17.5cm group, and 20cm group were 0.26 (95% confidence interval [CI]=0.10, 0.48), 0.35 (95% CI=0.16, 0.57), and 0.65 (95% CI=0.43, 0.84), respectively. The incidence of arrhythmic episodes was higher in the 20cm group than in the 15cm (odds ratio [OR]=5.31; 95% CI=1.50, 18.84) and 17.5cm (OR =3.52; 95% CI=1.05, 11.83) groups. There was no significant difference in arrhythmia rates between the 15cm group and 17.5cm group (p=0.542).CONCLUSIONSDuring central venous catheterization through the right internal jugular vein, inserting guidewires to depths of 15 or 17.5cm before tissue dilation reduced the incidence of arrhythmic episodes compared to a depth of 20cm.

Database: Medline

38. Benefits of Emergency Departments' Contribution to Stroke Prophylaxis in Atrial Fibrillation: The EMERG-AF Study (Emergency Department Stroke Prophylaxis and Guidelines Implementation in Atrial Fibrillation).

Author(s): Coll-Vinent, Blanca; Martín, Alfonso; Sánchez, Juan; Tamargo, Juan; Suero, Coral; Malagón, Francisco; Varona, Mercedes; Cancio, Manuel; Sánchez, Susana; Carbajosa, José; Ríos, José; Casanovas, Georgina; Ràfols, Carles; Del Arco, Carmen; EMERG-AF Investigators

Source: Stroke; May 2017; vol. 48 (no. 5); p. 1344-1352

Publication Date: May 2017

Publication Type(s): Multicenter Study Journal Article Observational Study

PubMedID: 28389612

Abstract:BACKGROUND AND PURPOSELong-term benefits of initiating stroke prophylaxis in the emergency department (ED) are unknown. We analyzed the long-term safety and benefits of ED prescription of anticoagulation in atrial fibrillation patients.METHODSProspective, multicenter, observational cohort of consecutive atrial fibrillation patients was performed in 62 Spanish EDs. Clinical variables and thromboprophylaxis prescribed at discharge were collected at inclusion. Follow-up at 1 year post-discharge

included data about thromboprophylaxis and its complications, major bleeding, and death; risk was assessed with univariate and bivariate logistic regression models.RESULTSWe enrolled 1162 patients, 1024 (88.1%) at high risk according to CHA2DS2-VASc score. At ED discharge, 935 patients (80.5%) were receiving anticoagulant therapy, de novo in 237 patients (55.2% of 429 not previously treated). At 1 year, 48 (4.1%) patients presented major bleeding events, and 151 (12.9%) had died. Anticoagulation first prescribed in the ED was not related to major bleeding (hazard ratio, 0.976; 95% confidence interval, 0.294-3.236) and was associated with a decrease in mortality (hazard ratio, 0.398; 95% confidence interval, 0.231-0.686). Adjusting by the main clinical and sociodemographic characteristics, concomitant antiplatelet treatment, or destination (discharge or admission) did not affect the results.CONCLUSIONSPrescription of anticoagulation in the ED does not increase bleeding risk in atrial fibrillation patients at high risk of stroke and contributes to decreased mortality.

Database: Medline

39. Elevated calprotectin in patients with atrial fibrillation with and without heart failure.

Author(s): Bruhn, Lærke V; Lauridsen, Kasper G; Schmidt, Anders S; Rickers, Hans; Bach, Leif F; Løfgren, Bo; Hornung, Nete

Source: Scandinavian journal of clinical and laboratory investigation; May 2017; vol. 77 (no. 3); p. 210-215

Publication Date: May 2017

Publication Type(s): Clinical Trial Journal Article

PubMedID: 28276729

Abstract: Calprotectin is an inflammatory marker, which has been found elevated in patients suffering from cardiac conditions, e.g. myocardial infarction, unstable angina and chronic heart failure. Inflammation has further been linked to atrial fibrillation (AF). However, the association between calprotectin and AF is unknown. We aimed to compare calprotectin levels in patients suffering from AF with healthy adults. In addition, AF patients with and without heart failure were compared. Calprotectin was measured in patients undergoing elective direct current cardioversion for AF. Calprotectin was determined before, 4 hours and 3 months after cardioversion. Healthy blood donors were used to verify the reference interval for calprotectin. In total, 104 prospectively enrolled patients were included. The median serum calprotectin level for AF patients was 1.6 μg/mL before cardioversion. Calprotectin levels increased significantly 4 h (1.9 μg/mL) and 3 months (2.2 μg/mL) after cardioversion. Blood donors' median serum calprotectin (1.3 μg/mL) was significantly lower than AF patients. AF patients with heart failure had significantly higher calprotectin at baseline compared with AF patients without a history of heart failure (2.0 μg/mL vs. 1.5 μg/mL). The difference was not significant at 4 h (2.0 μg/mL vs. 1.7 μg/mL) or 3 months (2.5 μg/mL vs. 2.2 μg/mL). In conclusion, the calprotectin levels in patients with AF were significantly higher than healthy blood donors and were further increased after cardioversion. AF patients with heart failure had significantly higher levels of calprotectin than AF patients without heart failure.

Database: Medline

40. Screening strategies for atrial fibrillation: a systematic review and cost-effectiveness analysis.

Author(s): Welton, Nicky J; McAleenan, Alexandra; Thom, Howard Hz; Davies, Philippa; Hollingworth, Will; Higgins, Julian Pt; Okoli, George; Sterne, Jonathan Ac; Feder, Gene; Eaton, Diane; Hingorani, Aroon; Fawsitt, Christopher; Lobban, Trudie; Bryden, Peter; Richards, Alison; Sofat, Reecha

Source: Health technology assessment (Winchester, England); May 2017; vol. 21 (no. 29); p. 1-236

Publication Date: May 2017

Publication Type(s): Meta-analysis

PubMedID: 28629510

Abstract:BACKGROUNDAtrial fibrillation (AF) is a common cardiac arrhythmia that increases the risk of thromboembolic events. Anticoagulation therapy to prevent AF-related stroke has been shown to be cost-effective. A national screening programme for AF may prevent AF-related events, but would involve a substantial investment of NHS resources.OBJECTIVESTo conduct a systematic review of the diagnostic test accuracy (DTA) of screening tests for AF, update a systematic review of comparative studies evaluating screening strategies for AF, develop an economic model to compare the cost-effectiveness of different screening strategies and review observational studies of AF screening to provide inputs to the model.DESIGNSystematic review, meta-analysis and cost-effectiveness analysis.SETTINGPrimary care.PARTICIPANTSAdults.INTERVENTIONScreening strategies, defined by screening test, age at initial and

final screens, screening interval and format of screening {systematic opportunistic screening [individuals offered screening if they consult with their general practitioner (GP)] or systematic population screening (when all eligible individuals are invited to screening)}.MAIN OUTCOME MEASURESSensitivity, specificity and diagnostic odds ratios; the odds ratio of detecting new AF cases compared with no screening; and the mean incremental net benefit compared with no screening.REVIEW METHODSTwo reviewers screened the search results, extracted data and assessed the risk of bias. A DTA meta-analysis was perfomed, and a decision tree and Markov model was used to evaluate the cost-effectiveness of the screening strategies.RESULTSDiagnostic test accuracy depended on the screening test and how it was interpreted. In general, the screening tests identified in our review had high sensitivity (> 0.9). Systematic population and systematic opportunistic screening strategies were found to be similarly effective, with an estimated 170 individuals needed to be screened to detect one additional AF case compared with no screening. Systematic opportunistic screening was more likely to be cost-effective than systematic population screening, as long as the uptake of opportunistic screening observed in randomised controlled trials translates to practice. Modified blood pressure monitors, photoplethysmography or nurse pulse palpation were more likely to be cost-effective than other screening tests. A screening strategy with an initial screening age of 65 years and repeated screens every 5 years until age 80 years was likely to be cost-effective, provided that compliance with treatment does not decline with increasing age.CONCLUSIONSA national screening programme for AF is likely to represent a cost-effective use of resources. Systematic opportunistic screening is more likely to be cost-effective than systematic population screening. Nurse pulse palpation or modified blood pressure monitors would be appropriate screening tests, with confirmation by diagnostic 12-lead electrocardiography interpreted by a trained GP, with referral to a specialist in the case of an unclear diagnosis. Implementation strategies to operationalise uptake of systematic opportunistic screening in primary care should accompany any screening recommendations.LIMITATIONSMany inputs for the economic model relied on a single trial [the Screening for Atrial Fibrillation in the Elderly (SAFE) study] and DTA results were based on a few studies at high risk of bias/of low applicability.FUTURE WORKComparative studies measuring long-term outcomes of screening strategies and DTA studies for new, emerging technologies and to replicate the results for photoplethysmography and GP interpretation of 12-lead electrocardiography in a screening population.STUDY REGISTRATIONThis study is registered as PROSPERO CRD42014013739.FUNDINGThe National Institute for Health Research Health Technology Assessment programme.

Database: Medline

Journals: Tables of Contents

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Journal of the American College of Cardiology

August 01 2017, Volume 70, Issue 5

Circulation

July 25 2017, Volume 136, Issue 4

European Heart Journal

July 7 2017, Volume 38, Issue 26

Exercise: Heterogeneity

Heterogeneity is the extent to which studies brought together in a systematic review demonstrate variation across a range of key variables.

Match the different types of heterogeneity:

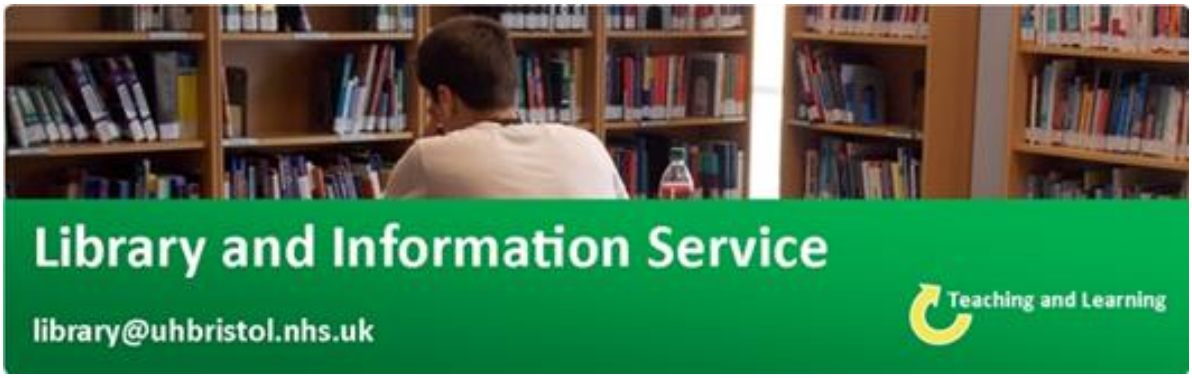
1. Statistical heterogeneity (conventionally just known as 'heterogeneity')
2. Methodological heterogeneity
3. Clinical heterogeneity

A. Variability in the participants, interventions and outcomes studied

B. Variability in study design and risk of bias

C. Variability in the intervention effects being evaluated in the different studies

Answers: 1C, 2B, 3A



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