Supplementary Table 1. Ongoing Clinical Trials (Cardioversion, Ablation, Device implantation)*

	Title	Clinical trials identifier	Agent / intervention	Comparator	Study design	Study objective / comments
Cardioversion	Early Versus Late DC-cardioversion of Persistent Atrial Fibrillation. Effect on Atrial Remodeling, Inflammatory and Neurohumoral Markers and Recurrence of Atrial Fibrillation	NCT01593150	Dabigatran	Early vs late DC-cardioversion	Interventional, randomized single-blind parallel assignment to compare early DC-cardioversion to conventional treatment. Patients with persistent AF will be randomized to 1) early cardioversion preceded by TEE in accordance with guidelines, or 2) conventional treatment with dabigatran for 4 weeks prior to DC-cardioversion.	To determine the safety and efficacy of either early or late DC-cardioversion with 12 months of follow-up.
	Risk of Stroke and Silent Cerebrovascular Thromboembolism After Cardioversion of Atrial Fibrillation (AFTER-CV)	NCT01924065	TEE	Warfarin or other DOACs (dabigatran, rivaroxaban, apixaban, edoxaban)	Interventional, randomized parallel assignment. Patients with AF undergoing cardioversion will be randomized to either, 1) TEE or 2) oral anticoagulation with either an approved DOAC, or warfarin, for 3 weeks (warfarin dosed to a target INR of 2–3).	To determine the relative risk of stroke and/or silent cerebrovascular thromboembolism events in patients undergoing cardioversion and who undergo either TEE or are anticoagulated with warfarin or one of the approved DOACs.
	Anticoagulation With Rivaroxaban in Cardioversion – The ARC Study (ARC)	NCT01747746	Rivaroxaban	Warfarin and enoxaparin	Interventional, non-randomized parallel assignment. Rivaroxaban will be compared with warfarin historical control group studying the safety and	To determine the efficacy of rivaroxaban in preventing clot formation after a patient's heart rhythm has been reset by a cardiologist using an

					efficacy in patients undergoing cardioversion.	electrical device.
	Study of the Blood Thinner, Apixaban, for Patients Who Have an Abnormal Heart Rhythm (Atrial Fibrillation) and Expected to Have Treatment to Put Them Back Into a Normal Heart Rhythm (Cardioversion) (EMANATE)	NCT02100228	Apixaban	Parenteral heparin and/or oral VKA	Interventional, randomized parallel assignment. Apixaban will be compared with parenteral heparin and/or a VKA in a randomized, open-label study.	To assess the safety and efficacy of apixaban vs warfarin in patients with AF who are planning to undergo an early cardioversion.
	Use of Dabigatran Etexilate to Prevent Stroke and Thromboembolism	NCT01976507	Dabigatran	Historical data	Dabigatran will be administered immediately following the ablation procedure (4–6 hours after sheath pull and vascular hemostasis) and continue for a minimum of 3 months.	To compare major bleeding risks and thromboembolic event rates in patients on dabigatran post RF ablation to rates reported in an earlier study (Lakkireddy D, et al, 2012).
	Electrophysiological Effects of NACOS and AVK on Pulmonary Veins and Left Atrium in Paroxysmal AF Catheter Ablation (NACO-VP)	NCT02814955	NACOs (new oral anticoagulants) (dabigatran, apixaban, rivaroxaban)	Warfarin and fluindione (AVK)	Prospective, observational cohort design. Some NACOs and some AVKs have direct electrophysiological effects in the pulmonary veins and on the left atrium (either an anti-arrhythmic or a pro-arrhythmic effect), which may impact the recurrence of AF in patients after ablation.	To investigate the electrophysiological effects of NACOS (dabigatran, apixaban, rivaroxaban) or VKA warfarin (warfarin and fluindione) on the pulmonary veins and the left atrium of patients referred for ablation of paroxysmal AF by RF or cryotherapy.
	Optimal Anticoagulation for	NCT02168829	Rivaroxaban	Aspirin	Interventional safety and efficacy open-label study with	To assess whether ongoing, long-term OAC

	Higher Risk Patients Post-Catheter Ablation for Atrial Fibrillation Trial (OCEAN)				randomized parallel assignment. After a successful ablation procedure for AF, patients will be randomized to either an anticoagulation regimen with rivaroxaban or an antiplatelet regimen of an aspirin a day.	following successful catheter ablation for AF with rivaroxaban is superior to aspirin alone as antiplatelet therapy in preventing cerebral embolic events in moderately high-risk patients.
	Rivaroxaban in Endovenous Laser Ablation With and Without Miniphlebectomy (RITE)	NCT02584842	Rivaroxaban	NA (observational cohort)	Retrospective observational cohort. Observational study following outcomes in patients who received rivaroxaban for 5 days after endovenous laser ablation with or without miniphlebectomy.	To assess whether miniphlebectomy is safe and reduces the risk of venous thrombosis after laser ablation.
	Safe Use of New Oral Anticoagulants in Ablation for Atrial Fibrillation	NCT02569255	Dabigatran, rivaroxaban, or apixaban	NA (observational cohort)	Prospective observational cohort. Observational study following consecutive patients ablated by pulmonary venous ostia isolation for AF who were treated with dabigatran, rivaroxaban, or apixaban. NOAC treatment was interrupted for 24 hours before ablation.	To assess the safety of NOAC use prior to ablation, and over 3-month follow-up post-ablation, as determined by major bleeding complications or thromboembolic events.
	Clinical Trial for Optimal Novel Oral Anticoagulant (NOAC) Schedule Immediate Before Catheter Ablation for Atrial Fibrillation	NCT02504177	Dabigatran, rivaroxaban, or apixaban interruption 24 hours before ablation	Dabigatran, rivaroxaban, or apixaban interruption the day of ablation	Interventional safety and efficacy open-label study with randomized parallel assignment.	To compare safety outcomes in patients who interrupt NOAC treatment either 24 hours before or the day of scheduled AF ablation during the 30-day post-RF catheter ablation period, by comparing AEs (major and minor

						bleeding, thromboembolic, vascular complications, re-admission, and increased length of hospital stay).
	Prevention of Silent Cerebral Thromboembolism by Oral Anticoagulation With Dabigatran After Pulmonary Vein Isolation for Atrial Fibrillation (ODIn-AF)	NCT02067182	Dabigatran	No OAC	Interventional, open-label study with randomized parallel assignment.	To determine if continued dabigatran administration is superior for the prevention of silent cerebral embolism vs OAC discontinuation after 3 months in patients free from symptomatic AF episodes, with a CHA_2DS_2-VASc score ≥2 after the first pulmonary vein ablation for paroxysmal AF.
	Apixaban During Atrial Fibrillation Catheter Ablation: Comparison to Vitamin K Antagonist Therapy (AXAFA)	NCT02227550	Apixaban	VKA (INR 2–3)	Interventional safety and efficacy open-label study with randomized parallel assignment.	AXAFA is an open-label study to evaluate apixaban or VKA periprocedural treatment (30 days in advance minimum) in patients undergoing scheduled catheter ablation for AF, to assess the safety and efficacy of periprocedural apixaban or VKA for catheter ablation. The MRI sub-study will address the potential for apixaban therapy to reduce clinically silent brain lesions following catheter ablation for AF.
	Apixaban Evaluation of Interrupted Or Uninterrupted	NCT02608099	Apixaban (interrupted and	Warfarin	Interventional safety and efficacy open-label study with randomized parallel	To assess the safety and efficacy of 2 apixaban treatment strategies

	Anticoagulation for Ablation of Atrial Fibrillation (AEIOU)		uninterrupted)		assignment. Prospective patients will be randomized to 1 of 2 apixaban strategies (uninterrupted vs interrupted) and compared with a retrospective cohort of 300 matched warfarin-treated individuals.	(uninterrupted vs interrupted) in patients undergoing catheter ablation for the treatment of NVAF.
	Safety and Efficacy of Post Ablation Apixaban Use for Reduction of the Risk of Cerebrovascular Events in Patients Undergoing Ventricular Tachycardia Radiofrequency Catheter Ablation (STROKE-VT)	NCT02666742	Apixaban	Aspirin	Interventional safety and efficacy open-label study with randomized parallel assignment. Patients undergoing RF catheter ablation for scar-related VT will be randomized to either apixaban or aspirin as follow-up treatment.	To assess the efficacy of apixaban vs aspirin for lowering the risk of blood clots or stroke in patients with VT who have had an ablation procedure.
	Antithrombotic Treatment in Patients With Effectively Maintained Sinus Rhythm After Atrial Fibrillation Ablation (ATEMS-AF)	NCT03073850	Edoxaban	Aspirin or clopidogrel	Interventional safety and efficacy open-label study with randomized, parallel assignment. Patients undergoing successful catheter ablation for AF (established sinus rhythm) who are at risk of thromboembolic events (CHA_2DS_2-VASc score ≥2) will receive either OAC with edoxaban or antiplatelet therapy (ASA or clopidogrel).	To compare safety and efficacy of edoxaban vs antiplatelet therapy for long-term stroke prevention in patients who have sinus rhythm after a successful catheter ablation for AF and who are at risk of thromboembolic events (CHA_2DS_2-VASc score ≥2).
	Edoxaban Treatment Versus Vitamin K Antagonist (VKA) in Patients With Atrial Fibrillation (AF)	NCT02942576	Edoxaban	VKA	Interventional safety and efficacy open-label study with randomized, parallel assignment.	To compare the safety and efficacy of edoxaban vs a VKA in subjects with AF following catheter ablation.

	Undergoing Catheter Ablation (ELIMINATE-AF)				Patients receiving edoxaban: 21 days pre- and 90 days post-ablation. Patients receiving VKA: 21 days pre- and 90 days post-ablation.	
Device implantation	Safety and Efficacy of Left Atrial Appendage Closure Versus Antithrombotic Therapy in Patients With Atrial Fibrillation Undergoing Drug-Eluting Stent Implantation Due to Complex Coronary Artery Disease Device: Amplazter Cardiac Plug (ACP)	NCT 02606552	Dabigatran plus aspirin	Dabigatran plus clopidogrel	Interventional safety and efficacy open-label study with randomized parallel assignment. Patients with left atrial appendage occlusion will receive the Amplazter device, and dabigatran plus aspirin, or dabigatran plus clopidogrel.	To assess the safety and efficacy of percutaneous left atrial appendage closure using the Amplazter Cardiac Plug, plus either dabigatran plus aspirin or dabigatran plus clopidogrel after 3 months in patients with coronary artery disease treated with drug-eluting stent.
	The Strategy to Prevent Hemorrhage Associated With Anticoagulation in Renal Disease Management (STOP HARM) Trial (STOP-HARM) Device: Watchman	NCT 02885545	Watchman	Prescribed OAC (VKA, apixaban, or rivaroxaban)	Interventional safety and efficacy open-label study with randomized, parallel assignment. Patients with severe chronic kidney disease who develop AF are at high risk for stroke and/or major bleeding events. In light of these risks, use of OAC in dialysis patients is controversial, since OAC further elevates the risk of	To assess the risk of major bleeding or thromboembolic embolism in patients undergoing left atrial appendage occlusion with the Watchman device vs treatment with OACs (VKA, apixaban, or rivaroxaban).

					major bleeding.	
	Strategy of Continued Versus Interrupted Novel Oral Anti-coagulant at Time of Device Surgery in Patients With Moderate to High Risk of Arterial Thromboembolic Events (BRUISECONTROL2)	NCT01675076	Continuous dabigatran or rivaroxaban or apixaban	Interrupted dabigatran or rivaroxaban or apixaban	Prospective, open-label, randomized trial with 1:1 randomization to either continued NOAC or interrupted NOAC in patients with non-rheumatic AF or atrial flutter at moderate to high risk of arterial thrombo-embolic events who require device surgery.	To determine the best strategy for managing NOACs at the time of pacemaker or defibrillator surgery. The working hypothesis is that performing device surgery without interruption of the NOAC will result in a reduced rate of clinically significant hematoma.

AE = adverse event; AF = atrial fibrillation; AVK = fluindione and warfarin; DC = direct current; DOACs = direct-acting oral anticoagulants; INR = international normalized ratio; NA = not applicable; NACOs = new oral anticoagulants; NOACs = novel oral anticoagulants; NVAF = non-valvular atrial fibrillation; OAC = oral anticoagulation; RF = radiofrequency; TEE = transesophageal echocardiography; VKA = vitamin K antagonists; VT = ventricular tachycardia.

*US National Institutes of Health. ClinicalTrials.gov. 2017; https://www.clinicaltrials.gov/. Accessed June 2, 2017