those with a history of cryptogenic stroke. Despite demonstrated effectiveness in AF detection, randomized trials have not clearly demonstrated a reduction in stroke and systemic embolism (SSE) or transient ischemic attack (TIA). We performed a systematic review and meta-analysis of randomized trials evaluating extended monitoring versus usual care on reduction of stroke/SSE and TIA (PROSPERO #CRD42021277611).

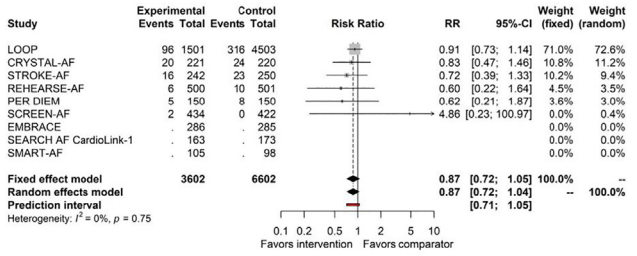
METHODS AND RESULTS: Studies were identified through CENTRAL, MEDLINE, and Embase searches using "atrial fibrillation" and separate terms for all monitoring devices. We included studies with ≥100 participants and ≥30 days follow-up. The primary outcome was a composite of SSE/TIA (or most inclusive outcome reported), with secondary outcomes including: AF incidence, oral anticoagulation (OAC) initiation, major bleeding, and adverse events. Meta-analyses were performed using R 'meta' package reporting risk ratios (RR) with 95% confidence intervals (95% CI) using a random-effects model. Risk-of-bias assessments were performed using the Cochrane Risk of Bias (RoB2) tool. From 1411 records, we included 9 RCTs (n=10,205). Mean age of was 69.5 years, 40.4% were female, and mean CHADS2 score was 4.0. Four studies used implantable cardiac monitors, 3 used external cardiac monitors, and 2 used handheld ECG devices (Table 1). Study populations included post-stroke or embolic stroke of undetermined significance (n=5), risk factors for AF or stroke (n=2), and post-cardiac surgery (n=1). Mean follow-up was 15.7 months (range 3.0-64.5). All studies had a low risk of bias or some concerns across most domains . Extended monitoring did not significantly reduce the primary outcome (Figure 1, RR 0.87, 95% CI 0.72-1.04, I2=0%, moderate certainty), or its individual components, versus usual care. Extended monitoring increased AF detection (RR 4.56, 95% CI 3.01-6.92, I2=65%, high certainty) and OAC use (RR 2.25, 95% CI 2.01-2.53, I2=0%, high certainty), but not major bleeding (RR 1.23, 95% CI 0.84-1.82, I2=0%, low certainty) or adverse events (RR 0.93, 95% CI 0.68-1.27, 1 trial, very low certainty).

CONCLUSION: In this meta-analysis of RCTs, extended monitoring was associated with increased AF detection and OAC use. However, it remains unclear whether extended monitoring is associated with a reduced risk of thromboembolic events.

Table 1. Randomized Trials Included in Meta-Analysis

Trial Name	Overall Risk of Bias	Number of Participants	Risk Group	Monitoring Device
STROKE-AF. JAMA 2021.	Some concerns (domain 3)	492	Stroke attributed to large- or small-vessel disease	Implantable cardiac monitor
CRYSTAL-AF. NEJM 2014.	Some concerns (domains 2, 3, 5)	441	Cryptogenic stroke	Implantable cardiac monitor
PER DIEM. JAMA 2021.	High (domain 3)	300	Ischemic stroke or TIA	Implantable cardiac monitor
LOOP. Lancet 2021.	Low	6004	70-90 years and $CHADS_2$ risk factor	Implantable cardiac monitor
EMBRACE. NEJM 2014.	Some concerns (domain 2)	572	Cryptogenic stroke	External cardiac monitor
SCREEN-AF. JAMA Cardiol 2021.	Some concerns (domains 2, 3)	856	≥75 years old	External cardiac monitor and home BP monitor
SEARCH-AF CardioLink-1. JAMA Netw Open 2021.	Some concerns (domain 1, 3, 5)	336	Cardiac Surgery	External cardiac monitor
REHEARSE-AF. Circ 2017.	Some concerns (domain 2)	1001	≥65 years old and CHA_2DS_2-VASc ≥2	Handheld ECG device (Kardia™)
SMART-AF. Europace 2021.	High (domains 1, 2, 3)	203	Ischemic stroke or TIA	Handheld ECG device (Kardia™)

Figure 1. Forest Plot of Primary Outcome (Stroke, Transient Ischemic Attack, Systemic Embolism)



P087
STROKE, DEATH, AND ADHERENCE TO ORAL ANTICOAGULANTS IN AF: A RETROSPECTIVE OBSERVATIONAL STUDY WITH ADHERENCE AS A CONTINUOUS VARIABLE

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BACKGROUND: Patients with atrial fibrillation (AF) who are prescribed oral anticoagulants (OACs) for stroke and systemic embolism (SSE) prevention are frequently nonadherent to therapy. Uncertainty remains about the association between nonadherence and the risk of SSE and death. The objective of this study was to quantify the association between nonadherence to OACs and its clinical consequences.

METHODS AND RESULTS: Using linked, population-based administrative data containing physician billing, hospitalization, and prescription records of 5 million British Columbians (1996-2020), incident adult cases of AF were studied. For each patient, proportion of days covered (PDC) was calculated from the date of their first prescription for any OAC to the end of follow-up as a continuous annual time-updated exposure of interest. The validated REWarDS method was applied to estimate PDC for warfarin. Multivariable Cox proportional hazard models were used to evaluate the primary outcome, the association between PDC and SSE or death, controlling for known confounders. Secondary analyses were done for death and SSE as discrete outcomes. The study cohort included 41,033 OAC recipients [mean age 68.4y (SD 12.7), 45% female, mean CHA2DS2-VASc score 2.25 (SD 1.46)]. The mean PDC for the cohort was 0.69 (SD 0.28) over a median follow-up of 6.7 years. Multivariate modelling showed that every 10% absolute increase in PDC was associated with a 5.3% lower hazard of SSE or death [Hazard Ratio (HR) 0.47, 95%CI 0.42 − 0.53]. This result was stable in the sensitivity analysis when the cohort was confined to those starting therapy after 2010 (when all OACs were available; n=19,588): HR 0.47 (95%CI 0.37-0.60). Secondary analyses showed that every 10% increase in PDC was also associated with a 4.8% and 5.6% lower hazard of death (HR 0.52, 95%CI 0.44 − 0.61), and SSE (HR 0.44, 95%CI 0.38-0.52), respectively.

CONCLUSION: Degree of adherence to OACs in patients with AF is strongly associated with SSE and death, with an approximate 5% reduction in hazard of these events for every 10% absolute

increase in average annual adherence. This effect was robust over different periods of study. Efforts to improve patients' adherence to OACs could significantly reduce their risk of these devastating clinical events.

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P088
SURVIVAL, VENTRICULAR ARRHYTHMIA, AND IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR USEFULNESS IN A COHORT OF PATIENTS WITH TOXIC DILATED CARDIOMYOPATHY

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BACKGROUND: Toxic dilated cardiomyopathy (T-DCM) is now recognized as a potential cause of severe left ventricular dysfunction. Abuse of substances such as amphetamines, methamphetamines, cocaine, anabolic steroids, and energy drinks can cause various cardiovascular effects, repolarization perturbation, ventricular arrhythmias, and sudden cardiac death due to many mechanisms. The burden of ventricular arrhythmias (VA) and the role of a prophylactic implantable cardioverter-defibrillator (ICD) are not well documented in this population. We aim to assess the value of ICD implantation in a cohort of T-DCM.

METHODS AND RESULTS: Patients younger than 65 years old with a left ventricular ejection fraction (LVEF) < 35% followed at a tertiary center heart failure clinic between January 2003 and August 2019 were screened for inclusion. The diagnosis of T-DCM was confirmed after excluding other etiologies, and substance abuse was established according to the DSM-5 criteria. The composite primary endpoints were arrhythmic syncope, sudden cardiac death, or death of unknown cause. The secondary endpoint was the occurrence of sustained VAs and/or appropriate therapies in ICD carriers. The proportion of patients qualifying for an ICD in primary prevention at 12 months was assessed as an exploratory endpoint. Thirty-eight patients were identified, and an ICD was implanted in 19 (50%) of these patients. In the 19 other patients, no ICD was implanted for the following reasons: early LVEF recovery ≥35% during the first six months (n=13), noncompliance to treatment (n=5), and early heart transplantation (n=1). Six deaths occurred, with no significant differences between the 2 groups (ICD vs. non-ICD; p=0.14). After a mean follow-up of 33±36 months, only two VA episodes were reported in the ICD group. Three patients received inappropriate ICD therapies. One ICD implantation was complicated with cardiac tamponade. Twenty-three patients (61%) had an LVEF ≥35% at 12 months.

CONCLUSION: VAs are rare in the T-DCM population and the benefit of prophylactic ICD insertion was not seen in our small cohort. Since LVEF recovery is observed up to 12 months after the initial diagnosis, with few appropriate therapies after ICD implantation, it could be reasonable to assess the ICD indication later in the management of these patients, potentially between 6 and 12 months.

TABLE - Toxic cardiomyopathy cohort follow-up.

Characteristics	ICD population n=19 (50%)	Non-ICD population n=19 (50%)	*p*-value
Follow-up (months)	33±36	23±21	0.30
Time to ICD (months)	5±7	NA	NA
ICD follow-up (months)	39±30	NA	NA
Primary prevention ICD	18 (95)	NA	NA
Single-chamber	7(37)	NA	NA
Dual-chamber	2(11)	NA	NA
CRT	9(47)	NA	NA
S-ICD	1(5)	NA	NA
Ventricular arrhythmia	2 (10)	NA	NA
Appropriate shock	1(5)	NA	NA
Appropriate ATP	1(5)	NA	NA
Inappropriate shock	2(11)	NA	NA
Inappropriate ATP	2(11)	NA	NA
ICD complications			
Tamponade	1(5)	NA	NA
Infection	0	NA	NA
Device revision	0	NA	NA
Pneumothorax	0	NA	NA
NYHA	2±1	2±1	0.80
Syncope	1 (5)	0	0.30
Death (all causes)	3 (16)	3 (16)	1.00
Terminal HF	2 (10)	1 (5)	0.10
Unknown	1 (5)	2 (10)	0.10
Echocardiography			
Baseline LVEF (%)	15±6	18±8	0.25
3M LVEF (%)	22±10	31±17	<0.05
6M LVEF (%)	29±11	39±12	<0.05
12M LVEF (%)	34±15	41±11	0.10
30M LVEF (%)	38±13	39±13	0.68
30M LVEDD (mm)	60±10	60±10	1.00
30M LVESD (mm)	47±11	47±12	1.00
30M LVEDV (mL/m^2)	89±40	79±44	0.50
30M LVESV (mL/m^2)	62±45	55±39	0.64

Continuous data were expressed as mean±standard deviation. Qualitative variables were presented with numbers and percentages. **Acronyms**: 3M: 3 months; 6M: 6 months; 12M: 12 months; 30M: 30 months; ATP: antitachycardia pacing; CRT: cardiac resynchronization therapy; HF: heart failure; ICD: implantable cardioverter-defibrillator; LVEDD: left ventricular end-diastolic diameter; LVEDV: left ventricular end-diastolic volume; LVEF: left ventricular ejection fraction; LVESD: left ventricular end-diastolic diameter; LVESV: left ventricular end-systolic volume; S-ICD: subcutaneous implantable cardioverter-defibrillator.