Benefits of Prolonged Implantation of Cardiac Loop Recorders (ILR)

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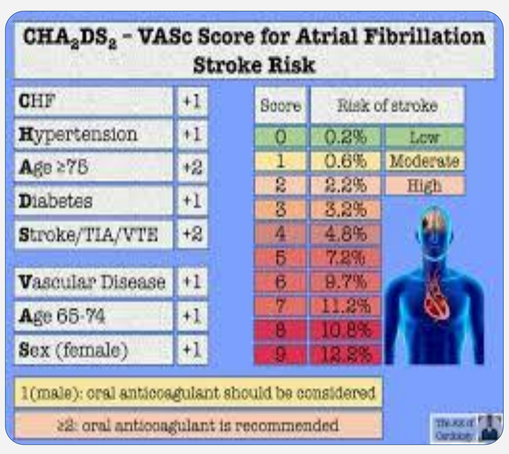
Background

- ILR's provide critical information when identifying causes of cardiac symptoms such as syncope (SYN), atrial fibrillation (AF), cryptogenic stroke (CGS), and palpitations (PALP)
- Short term monitoring remains a first line therapy at medical institutions
- Prescribing physician ultimately determines the method and length of time of monitoring
- As little as 5% of AF can be detected within the first 30 days, post CGS

Purpose

- Describe the demographic and clinical characteristics of patients with an Implantable Loop Recorder (ILR)
- Determine the time from insertion to first recorded clinical event
- Describe outcomes associated with the use of the ILR
- Examine the need for long-term ILR monitoring



Methods

Design: Retrospective, secondary data analysis using both manual and Electronic Medical Record (EMR) Data was collected over an 8-year period, between September 2014 and December 2022

Setting: Yale Heart and Vascular Electrophysiology Ambulatory Clinic

Sample: 367 patients who had not opted out from research and had an ILR

Analysis: Descriptive statistics and bivariate analysis

Human Subjects Protection: Approved by Yale University Institutional Review Board

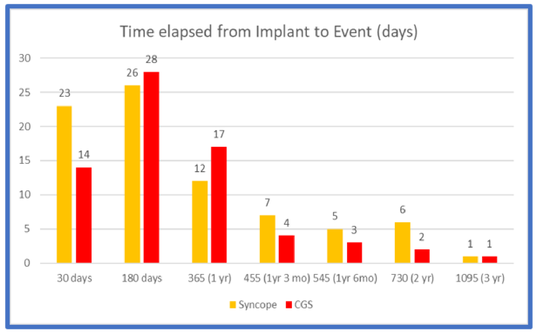
Results

Days Elapsed Implant to Event

Determine time from insertion to first recorded clinical event

- Mean number of days to (all types) event: **227**
- Median days to event: **122**

Syncope
Cryptogenic Stroke



Demographics & Clinical Characteristics

Describe the demographic and clinical characteristics of patients with the Implantable Loop Recorder (ILR)

Precipitating Events	
Frequency (%)	
Syncope	
Yes	155 (42%)
No	212 (58%)
Cryptogenic Stroke	
Yes	166 (45%)
No	201 (55%)

*Remaining events occurred in < 7% sample (AFIB, Palpitations, Arrythmias)

Sample Description n = 367	
Mean (SD)	
Age	69.78 (14.73)
Median (range)	73 (8 – 88)
Frequency (%)	
Gender	
Female	187 (51.23)
Male	178 (48.77)
Race	
Black	47 (12.81)
Hispanic	10 (2.72)
White	303 (82.56)
Other	7 (1.91)

Significant Bivariate Finding

Symptoms (before ILR):

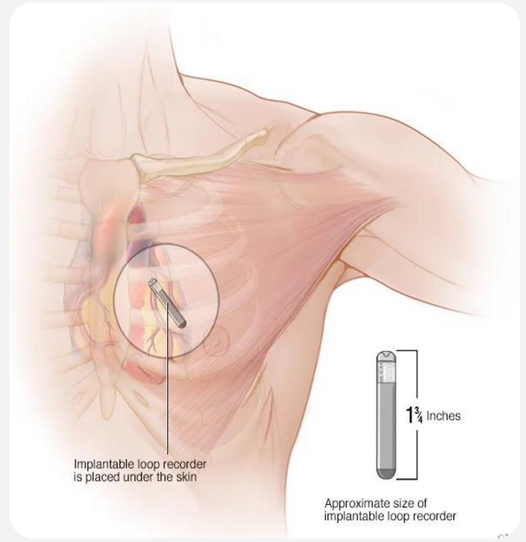
- SYN associated with a lower cardiac risk score ($CHAD_2DS_2$-VASc)
- CGS associated with being white and a higher score
- PALP associated with being female and a lower score

Treatment (post ILR):

- Age (65+), white, SYN associated with getting a pacemaker
- Age (65+), white, CGS and higher cardiac risk score associated with anti-coagulation therapy

Conclusions / Implications

- Patients with SYN and CGS experienced cardiac events as far as 1095 days (3 years) from date of implant.
- Study captured significant events during ILR monitoring well past the typical explant timeline
- While the bulk of events occurred within the first year, 19% of SYN patients, and 10 % of CRY patients had events between 1 and 3 years
- Data analysis reinforces the finding of other ILR studies concluding that prolonged cardiac monitoring is associated with improved outcomes and higher rates of survival
- The finding from this study supports the need to establish a clear standard of care when utilizing ILR for continuous monitoring



Acknowledgments

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