

Safety and Feasibility of Same-Day Discharge after Left Atrial Appendage Closure with the WATCHMAN device

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No conflict of interest

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Background

- Left atrial appendage closure (LAAC) is safe and effective for stroke prevention in patients with atrial fibrillation who are not ideal long-term anticoagulation candidates.
- As the use of LAAC becomes more widespread, improvements in resource utilization and cost-effectiveness are necessary. Data is limited on the safety of same-day discharge (SDD) compared with non-SDD after elective LAAC.

Methods

- This was a retrospective analysis of 211 patients who underwent LAAC using WATCHMAN in the Rochester General Hospital (June 2016 - June 2019).

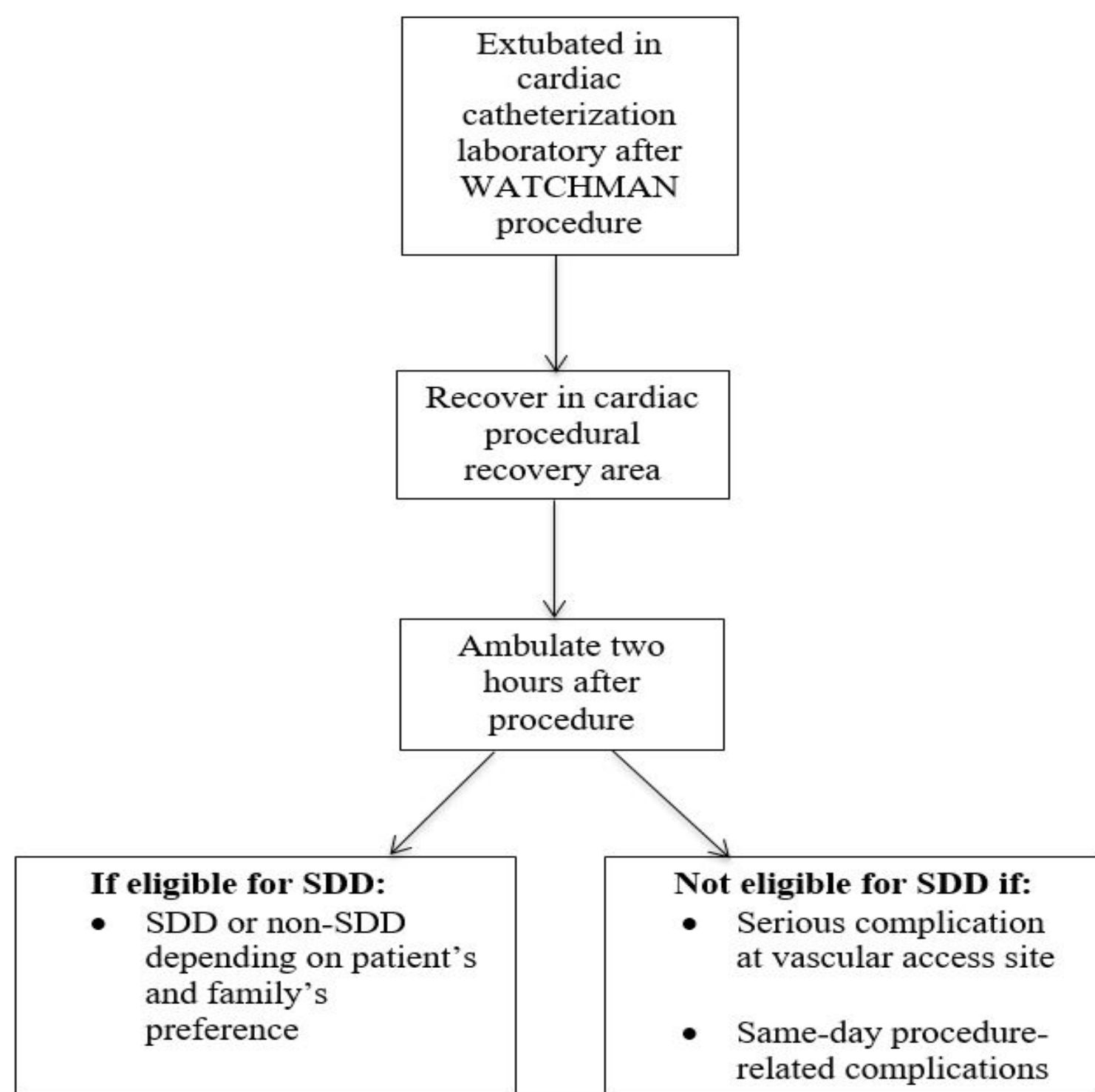


Figure 1: Flowchart of post-procedure care after elective left atrial appendage closure with the WATCHMAN device

- The primary safety outcome was the composite of stroke, systemic embolism, major bleeding requiring transfusion, vascular complications requiring endovascular intervention, or death through 7 days (periprocedural) and 45 days post-LAAC.
- The secondary outcomes were the individual components of primary outcome and all-cause readmission.

- We compared the clinical outcomes through 7 days (periprocedural) and 45 days of patients who had SDD versus non-SDD.

Results

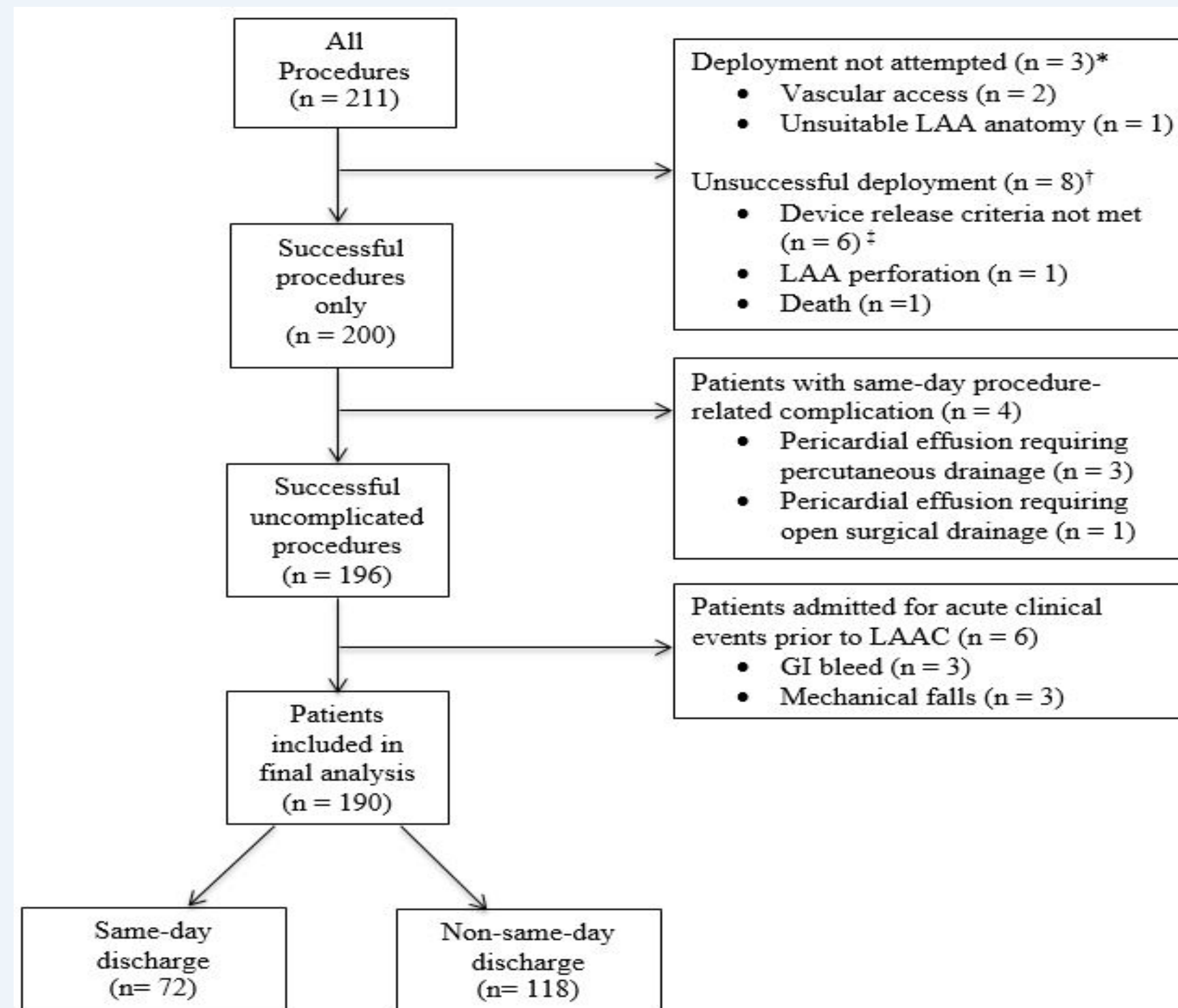


Figure 2: Flowchart of patients in final analysis for 7-day and 45-day outcomes *Procedure aborted before device deployment. †Device was deployed but unsuccessful. ‡All 4 device release criteria must be met for device release.

Baseline Characteristics	SDD (n = 72)	Non-SDD (n = 118)	P value
Age, yrs	75.7 ± 7.8	75.9 ± 8.6	0.71
Male	47 (65.3%)	62 (52.5%)	0.12
CHA ₂ DS ₂ VASc score	4.6 ± 1.4	4.9 ± 1.6	0.06
HASBLED score	2.7 ± 0.9	3.0 ± 0.9	0.04
CHF	32 (44.4%)	55 (46.6%)	0.77
Hypertension	69 (95.8%)	111 (94.1%)	0.59
Diabetes	27 (37.5%)	39 (33.1%)	0.53
Stroke/TIA/thromboembolism	17 (23.6%)	47 (39.8%)	0.02
Prior MI	25 (34.7%)	39 (33.1%)	0.81
History of major bleeding	55 (76.4%)	99 (83.9%)	0.20
Intracranial bleeding	5 (6.9%)	11 (9.3%)	0.57
GI bleeding	30 (41.2%)	54 (45.8%)	0.58
Other bleeding types	18 (25.0%)	37 (31.4%)	0.35
High fall risk	20 (27.8%)	26 (22.0%)	0.37
Chronic kidney disease	13 (18.1%)	15 (12.7%)	0.31
Liver disease	1 (1.4%)	4 (3.4%)	0.65
Alcohol abuse	1 (1.4%)	3 (2.5%)	1.0
Labile INRs	7 (9.7%)	8 (6.8%)	0.47
On OAC at referral	41 (56.9%)	49 (41.5%)	0.04
Discharge characteristics			
Discharged on DOAC	56 (77.8%)	91 (77.1%)	0.92
Discharged on warfarin	16 (22.2%)	26 (22.0%)	0.98

Table 1: Baseline and discharge characteristics of SDD and non-SDD group. Continuous variable presented as mean +/- sd, categorical variable presented as n (%)

At 7 days (periprocedural) and 45 days, there were no statistically significant differences between SDD and non-SDD in:

- Primary safety outcome
- Stroke
- Systemic embolism
- Major bleeding requiring transfusion
- Vascular complications requiring endovascular interventions
- Death
- All-cause readmission
- Device-related thrombus (45-day TEE)
- Significant peri-device flow (45-day TEE)

Clinical Outcomes	SDD (n=72)	Non-SDD (n=118)	P value
Primary safety outcome			
Periprocedural	1/72 (1.4%)	7/118 (5.9%)	0.26
45 days	2/72 (2.8%)	11/118 (9.3%)	0.14
Ischemic Stroke			
Periprocedural	0/72 (0%)	1/118 (0.8%)	1.0
45 days	0/72 (0%)	1/118 (0.8%)	1.0
Systemic embolism			
Periprocedural	0/72 (0%)	0/118 (0%)	
45 days	0/72 (0%)	0/118 (0%)	
Major bleeding requiring transfusion			
Periprocedural	1/72 (1.4%)	5/118 (4.2%)	0.41
45 days	2/72 (2.8%)	9/118 (7.6%)	0.21
Vascular complications requiring endovascular intervention			
Periprocedural	0/72 (0%)	1/118 (0.8%)	1.0
45 days	0/72 (0%)	1/118 (0.8%)	1.0
All-cause death			
Periprocedural	0/72 (0%)	0/118 (0%)	
45 days	0/72 (0%)	0/118 (0%)	
All-cause readmission			
Periprocedural	1/72 (1.4%)	9/118 (7.6%)	0.09
45 days	6/72 (8.3%)	16/118 (13.6%)	0.27
Device thrombus on 45-day TEE	0/65 (0%)	0/114 (0%)	
Peri-device flow on 45-day TEE	0/65 (0%)	1/114 (0.9%)	1.0

Table 2: 7 days (Periprocedural) and 45 days outcomes post-WATCHMAN procedure*

Conclusion

- In a selected cohort of patients who underwent successful elective LAAC with WATCHMAN without same-day procedure-related complications, the primary safety outcome and secondary outcomes through 7 days and 45 days post-procedure were similar in the SDD and non-SDD groups.
- SDD has the potential to minimize the unnecessary use of medical resources and improve patient satisfaction without compromising patient safety.

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Extubated in cardiac catheterization laboratory after WATCHMAN procedure

Recover in cardiac procedural recovery area

Ambulate two hours after procedure

If eligible for SDD:

- SDD or non-SDD depending on patient's and family's preference

Not eligible for SDD if:

- Serious complication at vascular access site
- Same-day procedure-related complications

All Procedures (n = 211)

Successful procedures only (n = 200)

Successful uncomplicated procedures (n = 196)

Patients included in final analysis (n = 190)

Same-day discharge (n = 72)

Non-same-day discharge (n = 118)

Deployment not attempted (n = 3)*

- Vascular access (n = 2)
- Unsuitable LAA anatomy (n = 1)

Unsuccessful deployment (n = 8)†

- Device release criteria not met (n = 6)‡
- LAA perforation (n = 1)
- Death (n = 1)

Patients with same-day procedure-related complication (n = 4)

- Pericardial effusion requiring percutaneous drainage (n = 3)
- Pericardial effusion requiring open surgical drainage (n = 1)

Patients admitted for acute clinical events prior to LAAC (n = 6)

- GI bleed (n = 3)
- Mechanical falls (n = 3)

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