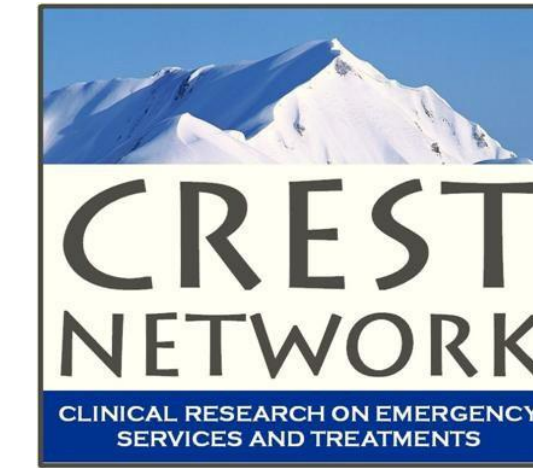


Emergency Department Management of Atrial Fibrillation/Flutter and Patient Quality of Life Scores One Month Post-Visit

Dustin W. Ballard MD, MBE¹; Mary E. Reed DrPH²; Nimmie Singh BS³; Adina S. Rauchwerger MPH²; Courtnee A. Hamity MPH²; Uli K. Chettipally MD, MPH⁴; Dustin G. Mark MD⁵; David R. Vinson MD⁶

¹Kaiser Permanente San Rafael Medical Center, San Rafael, CA; ²Kaiser Permanente Division of Research, Oakland, CA; ³Touro University College of Osteopathic Medicine, Vallejo, CA ⁴Kaiser Permanente South San Francisco Medical Center, South San Francisco, CA; ⁵Kaiser Permanente Oakland Medical Center, Oakland, CA; ⁶Kaiser Permanente Sacramento Medical Center, Sacramento, CA



Funding provided by the **Garfield Memorial Fund**

Background

Emergency Department (ED) management of patients presenting with new onset or paroxysmal atrial fibrillation/flutter (AF/F) varies considerably. Emergency physicians have limited evidence to guide ED rhythm management strategies that optimize post-ED visit outcomes.

Objectives

To identify patient and ED treatment characteristics of AF/F patients associated with:

- ED satisfaction post-visit
- AF/F-specific impact on Quality of Life (QoL) one month following an ED visit for AF/F symptoms

Methods

As part of a seven-center observational study of ED management and short-term outcomes of AF/F patients, we adapted an existing disease-specific QoL instrument, the Atrial Fibrillation Effect on Quality-of-life Questionnaire (AFEQT).

- The AFEQT assesses the specific impact of AF/F symptoms on QoL (0-100 scale, 100 = no impact).
- Survey was administered via telephone one month following an index ED visit for newly diagnosed and/or recent-onset (≤ 48 hours) AF/F. Response rate was 66%.
- The survey also contained a query on satisfaction level with the index ED visit.
- We excluded admitted patients and those who did not receive any ED rhythm-related intervention.

We created measures of:

- Charlson Comorbidity score
- Pre- and post-ED AF/F medication for stroke prophylaxis and rate control
- ED rhythm management (any cardioversion attempt and type)
- Rhythm at discharge (sinus vs. other)
- Patient age and sex from electronic health records

Using multivariable logistic regression with facility-level clustering, we examined the association between patient and ED treatment characteristics with 1) patient-reported ED satisfaction and 2) any patient-reported QoL impact of AF/F (AFEQT score < 100).

Results

652 patients met inclusion criteria (characteristics in Table 1). The AFEQT score distribution is shown in Figure 1 and is right-skewed. The median score was a favorable 93 (range 20-100, IQR 78, 98).

While ED electrical cardioversion and sinus rhythm at ED discharge were both associated with increased ED visit satisfaction, neither was associated with an AF/F QoL impact at one month post-visit. Patients who were female and younger ($p < 0.01$) were more likely to report **no** QoL impact of AF/F. There was no significant impact of pre- or post-ED medication or Charlson score on satisfaction or QoL.

Table 1: Patient and ED Intervention Characteristics

Characteristic		N (652)	%
Male sex		329	50.5
Age	70-79	177	27.2
	≥ 80	100	15.3
Charlson Score	0	207	31.8
	1	119	18.3
	2+	314	48.2
Pre-ED Warfarin Status	No Pre-ED Warfarin	321	49.2
	Yes Pre-ED Warfarin	331	50.8
Symptom Onset	> 48 hrs	139	21.3
	Recent	513	78.7
AF/F Category	Paroxysmal	551	84.5
	Chronic	20	3.1
	Unclear	81	12.4
Cardioversion Intervention	None	431	66.1
	Rx	44	6.8
	Electric	177	27.2
Sinus Rhythm at Discharge		421	64.6
ED Satisfaction	Excellent	455	69.8
AF/F QoL Score	No Impact	534	81.9
	Any Impact	118	18.1

Figure 1: AF-Specific Quality of Life Score Distribution

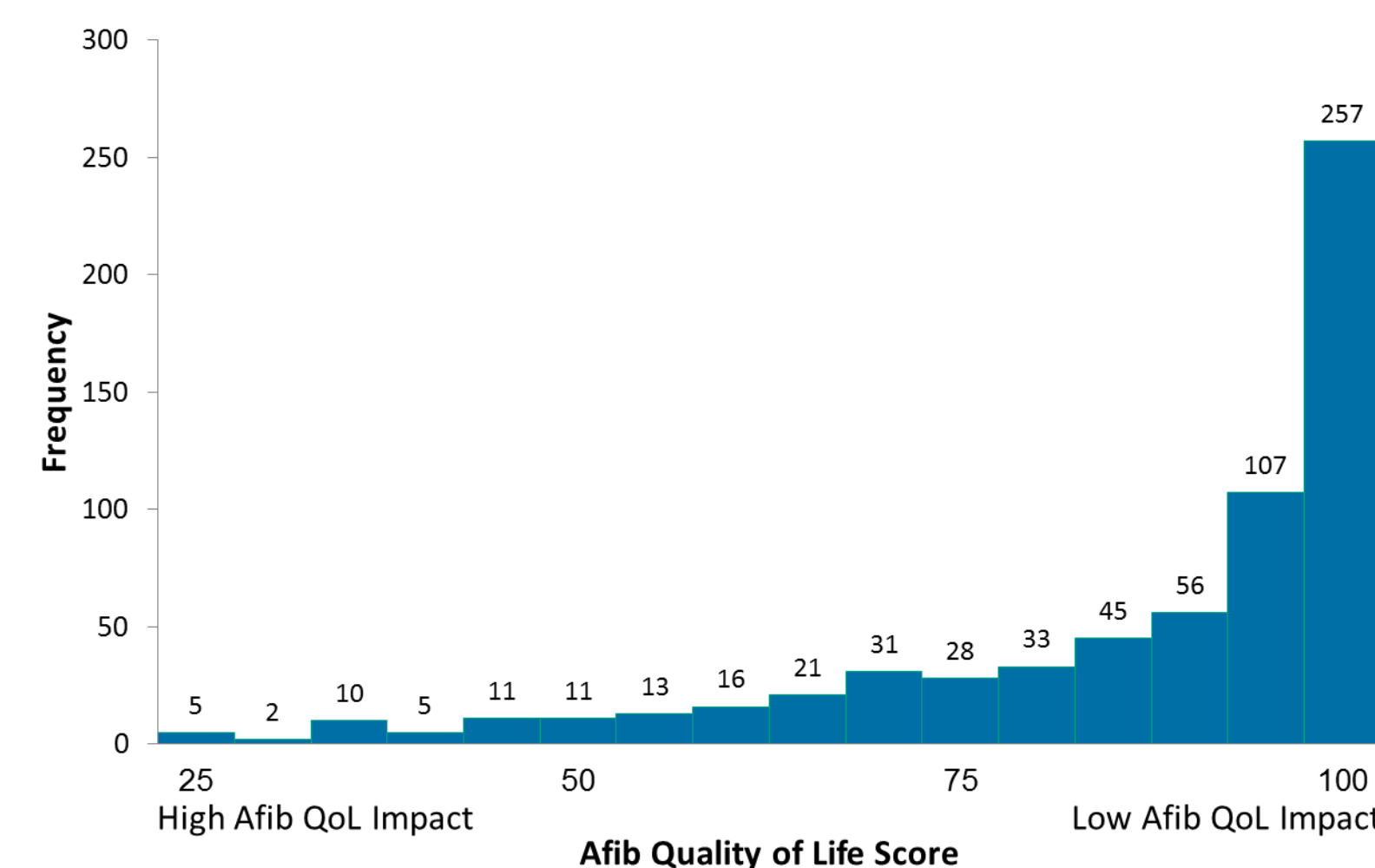


Table 2: Multivariable Analysis—Selected Characteristics and ED Interventions Associated with ED Satisfaction and QoL Impact

	ED Satisfaction (Excellent/Very good vs. Other)		QoL Impact (Y/N)	
	AOR	95% CI	AOR	95% CI
ED Intervention (vs. None): Rx	1.83	0.53, 6.31	1.25	0.61, 2.58
Electric	2.30	1.70, 3.12**	1.54	0.93, 2.55
Male (vs. Female)	0.92	0.75, 1.14	1.81	1.2, 2.73*
Age (vs. 18-49): 70-79	1.37	0.61, 3.06	3.44	1.68, 7.04**
≥ 80	1.97	0.85, 4.59	5.27	2.19, 12.67**
Charlson Score (vs. No Comorbidities): 1	1.35	0.86, 2.11	0.50	0.24, 1.02
2+	1.32	0.89, 1.94	1.18	0.75, 1.86
Sinus at Discharge (vs. Not)	1.82	1.27, 2.61**	1.17	0.93, 1.46

Note: CI=confidence interval; "Other" refers to satisfaction less than excellent/very good: good, fair, poor, very poor; * $p < 0.01$, ** $p < 0.001$; AOR=adjusted odds ratio

Limitations

- Recall bias (especially for ED satisfaction rating)
- Data skew towards no impact on QoL limits power

Conclusions

In this observational study, ED electrical cardioversion was associated with increased ED satisfaction ratings but not associated with AF/F-specific QoL impact one month after ED visit.

About CREST Network

The Clinical Research in Emergency Services & Treatments (CREST) Network is a multi-center, collaborative network at Kaiser Permanente that encourages, enables and executes research in Emergency Medicine. www.kpcrest.net

Contact: Dustin.Ballard@kp.org