

Baptist Health South Florida

Scholarly Commons @ Baptist Health South Florida

All Publications

8-26-2019

Ongoing Evaluation of the Impact of a Post-operative Atrial Fibrillation Prevention Protocol for Patients Undergoing Cardiothoracic Surgery

Kamarena Sankar

Baptist Hospital of Miami, kamarenas@baptisthealth.net

Jonatha Kline

Baptist Health South Florida, JonathanDK@baptisthealth.net

Heidi Clarke

Baptist Hospital of Miami, heidic@baptisthealth.net

Radhan Gopalani

Baptist Hospital of Miami, radhang@baptisthealth.net

Faaria Quadri

Baptist Hospital of Miami, FaariaQ@baptisthealth.net

Follow this and additional works at: <https://scholarlycommons.baptisthealth.net/se-all-publications>

Citation

Sankar, Kamarena; Kline, Jonatha; Clarke, Heidi; Gopalani, Radhan; and Quadri, Faaria, "Ongoing Evaluation of the Impact of a Post-operative Atrial Fibrillation Prevention Protocol for Patients Undergoing Cardiothoracic Surgery" (2019). *All Publications*. 3349.

<https://scholarlycommons.baptisthealth.net/se-all-publications/3349>

This Conference Poster -- Open Access is brought to you for free and open access by Scholarly Commons @ Baptist Health South Florida. It has been accepted for inclusion in All Publications by an authorized administrator of Scholarly Commons @ Baptist Health South Florida. For more information, please contact Carrief@baptisthealth.net.

Ongoing evaluation of the impact of a post-operative atrial fibrillation prevention protocol for patients undergoing cardiothoracic surgery

Kamarena Sankar, PharmD; Jonathan Kline, PharmD, BCCCP; Heidi Clarke, PharmD, BCCCP; Radhan Gopalani, PharmD, BCPS; Faaria Quadri, PharmD, BCPS; Baptist Hospital of Miami, Department of Pharmacy; Miami, FL



BACKGROUND

- Atrial Fibrillation is a common post-operative complication that may occur in up to 40% of patients following cardiothoracic surgery (CTS)
- Caused by pre-existing degenerative changes to myocardium and perioperative conditions that alter electrophysiological parameters
- Per P&T approved protocol, all patients undergoing CTS will be initiated prophylactic medications post-operatively unless contraindicated. After extubation, patients will be switched to oral equivalents
- Amiodarone** 150 mg IV bolus followed by amiodarone infusion 1 mg/minute x6 hours then decrease rate to 0.5 mg/min x 18 hours
- Metoprolol** 5 mg IV every 6 hours, Hold for SBP < 100 or HR < 60 or if currently paced via epicardial wires
- Ketorolac** 30 mg IV every 6 hours x 48 hours while intubated reduce dose to 15 mg IV every 6 hours for CrCl 25-50 mL/min. Do not give ketorolac if patient is actively bleeding or CrCl < 25 mL/min
- In April 2018, an interim analysis was done on 50 patients pre protocol implementation, and 100 patients post protocol implementation
 - This interim analysis helped guide nurses by helping to establish current hold parameters for protocol medications

OBJECTIVES

- Compare the incidence of POAF CTS patients prior to and after implementation of a protocol that standardizes the prophylactic management of Post-Operative Atrial Fibrillation (POAF) in all post-operative patients

METHODS

- Study Design:** Single center, IRB exempt, retrospective chart review pre and post protocol implementation
- Data Collection Period:**
 - Pre Implementation: June 1st, 2017 to August 31st, 2017
 - Interim Evaluation: October 1st, 2017 to February 29th, 2018
 - Ad Hoc: March 1st, 2018 to October 21st 2018
- Inclusion criteria**
 - Age ≥ 18 years
 - Received Coronary Artery Bypass Graft and/or valvular surgery during pre and post protocol implementation periods listed above
- Exclusion criteria**
 - Active atrial fibrillation/flutter or either arrhythmia at time of surgery
- Primary Endpoint**
 - Incidence of POAF in CTS, patients prior to and after protocol implementation
- Secondary Endpoint**
 - Intensive Care Unit (ICU) and hospital Length of Stay (LOS)
 - Safety of protocol medications
 - P&T approved protocol compliance

LIMITATIONS

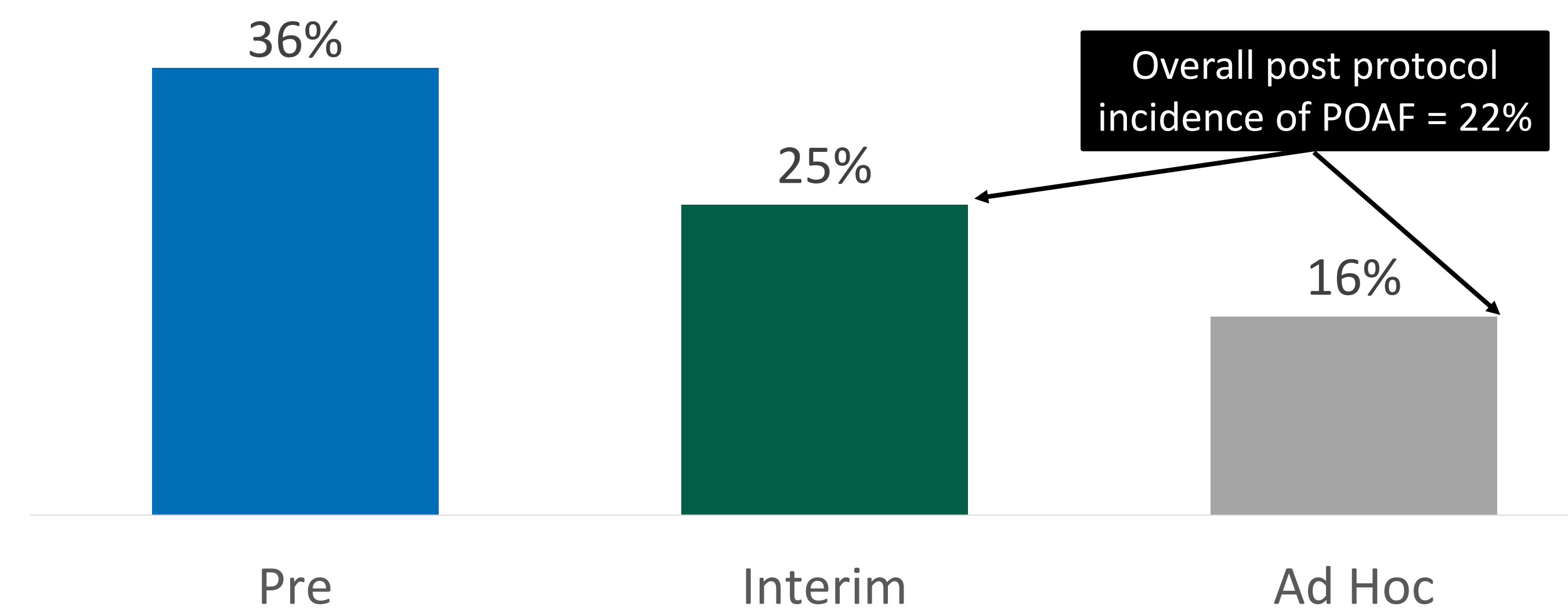
- Small sample size
- Two different investigators at different stages of the data collection

OUTCOMES

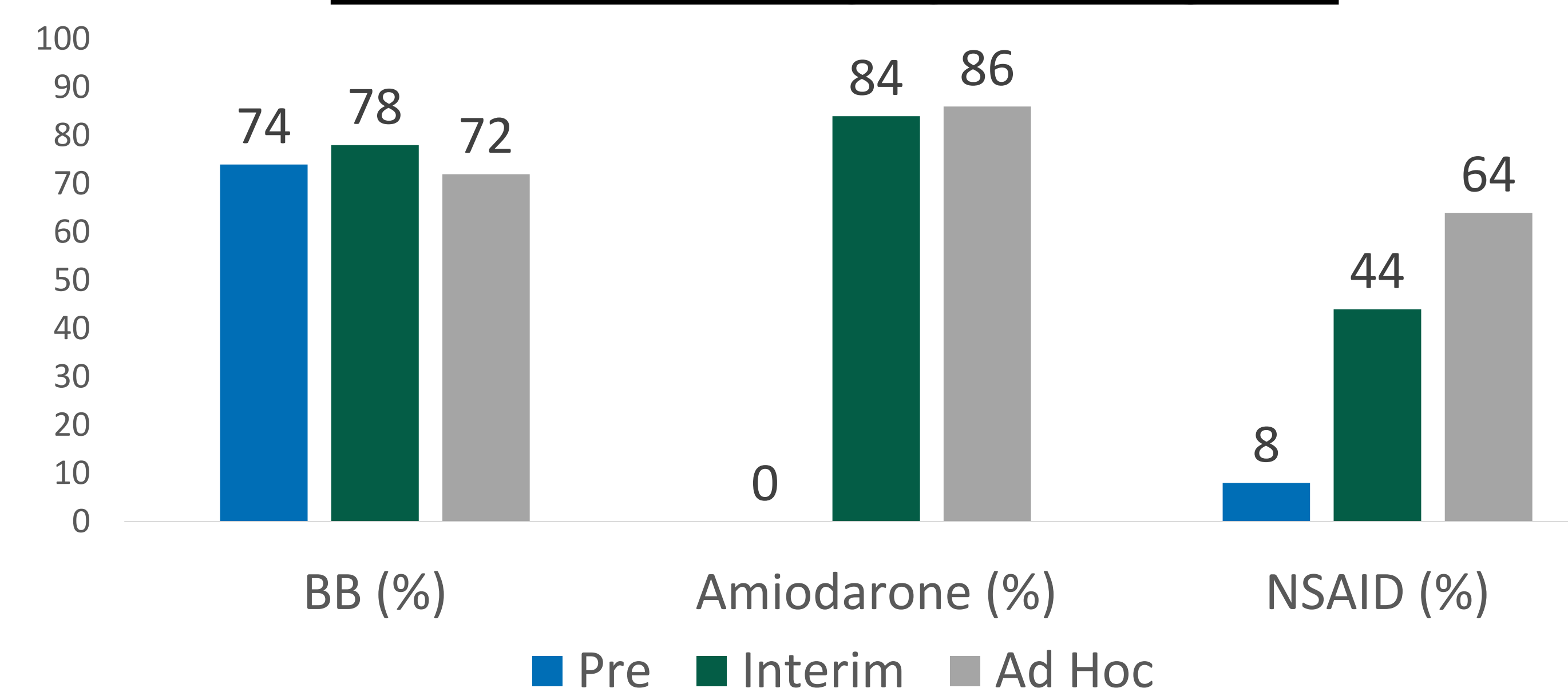
Baseline Characteristics

	Pre (n=50)	Interim (n=100)	Ad Hoc (n=50)
Age (years)	63	63	64
Gender - male, n (%)	35 (70)	70 (70)	32 (64)
CABG	32 (64)	60 (60)	36 (72)
x1	3 (6)	11 (11)	6 (12)
x2	13 (26)	21 (21)	21 (44)
x3	15 (30)	21 (21)	13 (26)
x4	1 (2)	7 (7)	1 (2)
Valvular	12 (24)	30 (30)	9 (18)
Aortic	6 (12)	21 (21)	5 (10)
Mitral	6 (12)	10 (10)	4 (8)
Combined	6 (12)	10 (10)	5 (10)
Emergent	24 (48)	49 (49)	29 (58)

Percent of Patients with Post Op Atrial Fibrillation



Utilization of Prophylactic Agents



Length of Stay

	Pre	Interim	Ad Hoc
ICU LOS (days)	3	3.3	3.3
Hospital LOS (days)	8	8.9	8.8

OUTCOMES

Risk Factor Comparison (n=150)

	No POAF (n=117)	POAF (n=33)
History of atrial fibrillation, n (%)	9 (8)	15 (45)
Mitral valvular disease, n (%)	9 (8)	6 (18)
Time on cardiopulmonary bypass (min)	98	139
Hypotension requiring vasopressors, n (%)	51 (44)	21 (64)

Protocol Compliance (n=150)

	No POAF (n=117)	POAF (n=33)
Number of agents received		
All three agents received, n (%)	52 (44)	8 (24)
Two agents received, n (%)	44 (38)	9 (27)
One agent received, n (%)	19 (16)	12 (36)
No agent received, n (%)	2 (2)	4 (12)

Safety Evaluation (n=150)

	Metoprolol	Amiodarone	NSAID
Received Therapy	114	127	76
ADR Requiring Dose Reduction or Discontinuation	18	31	12

CONCLUSIONS

- Incidence of POAF following CTS has reduced from 36% pre protocol to 22% post protocol with a relative risk reduction of 39%
- Prescribing of amiodarone and NSAIDs through this protocol has continued to improve post protocol implementation
- The number of protocol medications received is indirectly proportional to incidence of POAF development
- History of Atrial Fibrillation poses a major risk for POAF development after CTS

DISCLOSURES

- The study contributors have nothing to disclose regarding any financial or nonfinancial relationships with the products described, reviewed, or evaluated in this presentation.

REFERENCES

- Hashemzadeh K, Dehdilani M, Dehdilani M. Postoperative Atrial Fibrillation following Open Cardiac Surgery: Predisposing Factors and Complications. J Cardiovasc Thorac Res. 2013; 5(3):101-7
- Dunning J, Treasure T, Versteegh M, Nashef SA; EACTS Audit and Guidelines Committee. Guidelines on the prevention and management of de novo atrial fibrillation after cardiac and thoracic surgery. Eur J Cardiothorac Surg. 2006 Dec;30(6):852-72
- Fuster V, Ryden LE, Cannom DS, Crijns HJ, Curtis AB, Ellenbogen KA, Halperin JL, Kay GN, Le Huez JY, Lowe JE, Olsson SB, Prystowsky EN, Tamargo JL, Wann LS, Smith SC Jr, Priors SG, Estes NA 3rd, Ezekowitz MD, Jackman WM, January CT, Lowe JE, Page RL, Slotwimer DJ, Stevenson WG, Tracy CM, Jacobs AK, Anderson JL, Albert N, Buller CE, Creager MA, Ettinger SM, Guyton RA, Halperin JL, Hochman JS, Kushner FG, Ohman EM, Stevenson WG, Tarkington LG, Yancy CW; American College of Cardiology Foundation/American Heart Association Task Force. 2011 ACCF/AHA/HRS focused updates incorporated into the ACC/AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation: a report of the American College of Cardiology Foundation/American Heart Association Task Force on practice guidelines. Circulation. 2011 Mar 15;123(10):e269-
- January, CT, Wann LS, Alpert JS, Calkins H, Cigarroa JE, Cleveland JC Jr, Conti JB, Ellinor PT, Ezekowitz MD, Field ME, Murray KT, Sacco RL, Stevenson WG Tchou PJ, Tracy CM, Yancy CW; ACC/AHA Task Force Members. 2014 AHA/ACC/HRS guideline for the management of patients with atrial fibrillation: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on practice guidelines and the Heart Rhythm Society. Circulation. 2014 Dec 2;130(23):2071