

Emergency Medicine Journal Club - Block 6  
November 30, 2016  
Dr. Burkhardt and Schott

Clinical Question:

Does elective cardioversion have a role in the ED management of atrial fibrillation/flutter?

Clinical Vignette:

1) A 55-year-old male with history of T2DM presents to the ED with palpitations starting approximately 24 hours ago. EKG shows atrial fibrillation with rate of 160. He denies chest pain, shortness of breath, syncope, and altered mental status. He takes Metformin.

2) A 60-year-old female with history of HTN, HLD, DM, CAD s/p CABGx3, CHF, and atrial fibrillation presents to the ED with palpitations starting approximately 24 hours ago. EKG shows atrial fibrillation with rate of 160. She denies chest pain, shortness of breath, syncope, and altered mental status. She takes Insulin, Atorvastatin, Metoprolol, Lisinopril, Lasix, and Warfarin.

3) A 65-year-old female with history of HTN, presents to the ED with palpitations starting approximately 24 hours ago. EKG shows atrial fibrillation with rate of 160. She denies chest pain, shortness of breath, syncope, and altered mental status. She takes HCTZ and ASA 81mg daily.

Reference Articles:

1) Stiell IG, Clement CM, Perry JJ, Vaillancourt C, Symington C, Dickinson G, Birnie D, Green MS. Associated of the Ottawa Aggressive Protocol with rapid discharge of emergency department patients with recent-onset atrial fibrillation or flutter. *CJEM*. 2010 May;12(3):181-91. PMID: 205220282

2) von Besser K, Mills AM. Is discharge to home after emergency department cardioversion safe for the treatment of recent-onset atrial fibrillation? *Ann Emerg Med*. 2011;58:517-20. PMID: 22098994

3) Tran C, Bennell MC, Qui F, Ko DT, Singh SM, Dorian P, Atzema CL, Bhatia RS, Wijeyesundera HC. Predictors and clinical outcomes of inpatient versus ambulatory management after an emergency department visit for atrial fibrillation: A population-based study. *Am Heart J*. 2016 Mar;173:161-9. PMID: 2692609

Additional Material

Atrial Fibrillation ADP (Accelerated Diagnostic Protocol)

EMRAP: Atrial Fibrillation ADP (Part 1) – Cardioversion

EMRAP: Atrial Fibrillation ADP (Part 2) - Rate Control & Anticoagulation

Reference Material

Users' guides to the medical literature. XXII. How to Use Articles About Clinical Decision Rules. T.G. McGinn, G.H. Guyatt, P.C. Wyer, C.D. Naylor, I.G. Stiell, and W.S. Richardson. *JAMA*, 284:79-84 (2000).

Journal Club Discussion:

Following a review of the literature surrounding the management of acute onset AF in the ED, we found a wealth of support for the use of cardioversion (chemical & electrical) followed by home discharge. As this is not the current practice style of our local practice setting, this evidence was evaluated to review

its applicability and potential for changing our current local practice of regularly admitting these patients.

Using the articles above (which in short describe the overall success and safety of ED chemical/electrical cardioversion of acute onset AFib) residents compared/contrasted our current practice of rate control and likely admission with that of cardioversion and discharge. Benefits identified from the creation of an accelerated diagnostic protocol (ADP) including cardioversion included: shorter time to resolution of arrhythmia, decreased length of stay (and associated costs therein), and reduced need for additional outpatient prescriptions. Frequency of adverse events from cardioversion (thrombosis, significant hypotension, relapse, etc.) was also much less significant than previously believed.

#### The Bottom Line

In short, we decided that while the practice of ED cardioversion of acute onset AF is likely safe and beneficial for our patient population. In regards to the cases above, they each are presenting without acute decompensation or other symptomatology related to their cardiac status. As such, each of them could be potentially cardioverted in the ED, again with the close follow-up of an outpatient cardiologist. However, we do not have adequate outpatient resources to begin the practice today. As demonstrated in the reference material, close collaboration and agreement with specialists (cardiology, EP) is necessary for the successful development and integration of such an aggressive ADP. We look forward to following this evidence in hopes of its implementation in the near future.