EVMS Emergency Medicine Journal Club
Therapy Worksheet

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CITATION: Scheuermeyer, Frank X. **"Missed Opportunities for Appropriate Anticoagulation Among Emergency Department Patients with Uncomplicated Atrial Fibrillation or Flutter."** *Annals of Emergency Medicine*, vol. 62, no. 6, Dec. 2013,

A. What is being studied? (Answer below)	**Comments**
1. Study Objective	"to describe the proportion of patients who had incorrect anticoagulation on ED discharge and link it to 30 day and 1 year stroke outcomes"
2. Study Design	Retrospective Cohort chart review of 2 Canadian urban EDs
3. Inclusion Criteria	"Uncomplicated" ED pts from 2006-2010 with cardiologist confirmed Dx of Afib/flutter managed SOLELY by and Emergency Physician
4. Exclusion Criteria	Any pt in which the decision to anticoagulate was diffused across multiple providers. Kappa 0.71 for exclusion (CI0.61-0.80) (1) "complicated" fib/flutter which included acute medical illness (sepsis, ACS, pneumonia, CHF, PE, COPD, etc.) (2) recent PCI/CABG/pacemaker or ablation within 7 days of presentation (3) Cardiology consulted or follow-up
5. Interventions Compared	Initiation of oral anticoagulation in the ED based on CHADS2 score / stroke risk assessment
6. Outcomes Evaluated	Essentially the proportion of errors by EPs (1) Proportion of high risk pts with CHADS2 score > 0 who were not discharged on proper anticoagulation, did not have justification for withholding documented or were formally advised to discuss

	anticoagulation with a primary care physician (2) Secondary: Proportion of low risk (CHADS2=0) inappropriately started on Warfarin (3) Incidence of stroke within 30 days & within 365 days NOT counted as an error if holding anticoagulation was justified in the chart /i.e. risk of bleeding
B. Are the results of the study valid? Answer questions below	
1. Were patients randomized?	No since this was retrospective/observational. No "treatment" versus placebo or standard care arm to which a pt could be randomized. However, consecutive enrollment is somewhat "random"
2. Was randomization concealed (Blinded)	Chart reviewers were blinded to study hypothesis and to patient outcomes. EPs unaware of study – NO Hawthorn Effect
3. Were patients analyzed in the groups to which they were randomized?	N/A, again, no treatment/control arms
4. Were patients in the treatment and control groups similar with respect to known prognostic factors?	Baseline characteristics (Table 1) for healthy CHADS 0 patients were low. There was a higher percentage (72%) of males in the CHADS 0 group. The interrater reliability (kappa) for calculating CHADS2 score was .54 (poor), which may play into the missed opportunities given the implications (starting ASA and/or Coumadin) when the score changes from 0 to 1
C. Did experimental and control groups retain a similar prognosis after the study started (answer the questions below)?	
1. Were patients aware of group allocation?	N/A. Retrospective study.
2. Were clinicians aware of group allocation?	Retrospective study. Physicians were unaware of study. Management decisions were at discretion of treating MD.

3. Were outcome assessors aware of group allocation?	Blinded to study included: 1. Data abstractors were blinded to study outcomes or hypothesis 2. Second CHADS score assessors were blinded to study outcomes and hypotheses 3. Cardiologists reviewing CHADS scores and initial ECG's were blinded.
4. Was follow-up complete?	Mostly. Follow up was at 1 and 12 months using Canadian national health ID numbers. No reporting on number of patients lost to follow-up.
D. What were the results?	
1. How large was the treatment effect? (difference between treatment and control group).	1. 289/360 (80.2%) patients with CHADS>0 had previous dysrhythmia. Of these 197 (68.2% were already anticoagulated at time of ED visit. 2. 151 index events that met treatment criteria ("simple" afib/flutter not on anti-coagulation) 27.2% (95%CI 20.4-35.1%) were sent home with anticoagulation 3. 13.9% (95% CI 9.0-20.7%) had reasons for not treating documented 4. Overall 80/151 53% (95%CI 44.7-61.1%) who met criteria for anticoagulation were sent home with none and no documented justification For CHADS "0" 44/372 (11.8%) patients were new onset and no prior anticoagulation. Of these, 25/372 8.3% (95%CI 5.6-12.2) were D/C'd on warfarin w/o reason.
2. How precise was the estimated treatment effect at a 95% confidence interval?	See above for CI's
D. How can I apply the results to patient care	
IV. Were the study patients similar to my patients?	Uncertain. No race distribution given, disproportionate number of males in

	CHADS 0 . Canadian patients with complete access to f/u care and cost-free medications. Urban setting is similar.
1. Were all clinically important outcomes considered?	Yes. Stroke was assessed well. Bleeding events / or risks were not specifically addressed
2. Are the likely treatment benefits worth the potential harms and costs?	Uncertain. Stroke risk was very low. No calculations for bleeding risk such as HAS-BLED score. Overall 30 D and 1 year incidence of thrombotic events in patients who met criteria for treatment and no justification documented for not treating was 1/151 (0.6%) total 4/151 (2.6%) all events.

Limitations:

(1) Retrospective analysis
(2) The weighted kappa score for CHADS was 0.54 suggesting only moderate agreement
(3) Unclear why a sub-group analysis on excluded patients referred to cardiology was not performed
(4) The study design gives leeway to providers whom consulted cardiology or deferred anticoagulation to PCP assuming they documented as such. Since these pts were not analyzed it is not known whether this delay in treatment was sub-optimal and/or resulted in additional strokes.
(5) Major bleeding /hemorrhage was not parsed on or compared to CVA events explicitly

Clinical Bottom Line: EM physicians appear to underutilize CHADS scores or appropriately apply guideline recommendations to patients at risk of thrombotic events. Risk of 30 D and 1 year stroke are very low in CHADS 0 patients. Informing the decision making process with patients that includes risks of stroke and bleeding is probably warranted in this patient population.