Converting emergency physician management of patients with atrial fibrillation or flutter

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Atrial fibrillation and flutter (AFF) are the two most common dysrhythmias requiring emergency department (ED) management, and Canadian researchers have provided many advances in both the treatment and the safe, rapid disposition of patients with these conditions. In 2018, the Canadian Association of Emergency Physicians (CAEP), in conjunction with the Canadian Arrhythmia Network, published a Checklist [1] for managing recent onset (less than 48 h) AFF, based upon the Canadian Cardiovascular Society (CCS) Guidelines for Atrial Fibrillation. The Checklist has key decision nodes that cover all aspects of the clinical management of ED AFF patients, including rate and rhythm control as well as anticoagulation and outpatient follow-up care.

Two papers in this edition of the Canadian Journal of Emergency Medicine provide additional insight for physicians. A team led by Stiell performed a multicenter randomized trial investigating rhythm control for patients with atrial flutter [2], while Niaz and colleagues describe emergency physician (EP) anticoagulation decisions at two sites between 2014 and 2017 [3].

While observational data have indicated that chemical rhythm control is largely ineffective in converting atrial flutter [4, 5], no rigorous comparative assessment had been previously undertaken. At eleven Canadian academic centers, the RAFF-2 trial compared electrical cardioversion (shock-only) with chemical (using procainamide) followed

by electrical conversion (drug-shock) in 396 patients with acute atrial fibrillation. It found that nearly all patients converted with either method [6]. This methodologically rigorous trial also compared the same treatment arms in 76 patients with atrial flutter: 33 drug-shock and 43 shock-only [2]. Thirty-three (100%) and 40 (93%) patients converted to normal sinus rhythm, respectively. Minor conversion-related adverse events occurred in approximately one-quarter of patients in each group, but these were easily managed. Overall, 9/33 (27%) of patients converted using procainamide alone, results consistent with previous studies [4, 5]. Therefore, while the combination of procainamide and electrical conversion appears to provide safe, effective restoration of normal sinus rhythm in patients with atrial flutter, procainamide has limited success alone, and EPs should note this when engaging in shared decisions with patients.

Results may be less encouraging from an anticoagulation viewpoint. At two Ontario sites, researchers interrogated medical records from consecutive patients with new-onset AFF, estimating the CHADS-65 score for each patient [3]. The study provides a fair assessment of EP prescribing by restricting to the assessment to the 272 CHADS-65 positive patients who had no contraindications to direct oral anticoagulation (DOAC); only 45 (17%) were prescribed a DOAC upon ED discharge. At 90 days, of the remaining 227 patients who were not prescribed a DOAC, four had a stroke or transient ischemic attack; of the 45 patients who were prescribed a DOAC, two patients—neither of whom filled the prescription—had a stroke. However, there is no data on how many patients underwent ED-based rhythm control, which could have increased their short-term risk of stroke. Furthermore, the data do not describe whether EPs recorded specific concerns regarding DOAC initiation, or whether they had extensive discussions regarding risks and benefits of initiation, and whether patients declined a prescription following a shared decision. Of note, rapid cardiology and internal medicine outpatient follow-up was offered to all patients—which may not be available in all settings

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in Canada. If EPs felt their patient was going to quickly assessed by another care provider who could initiate OAC, this might lower EP prescribing rates compared to setting without such rapid follow-up. Interestingly, nearly 40% of patients did not attend this clinic, and while all these patients may have had an unrecorded primary care visit, this rate of follow-up loss may be an area suitable for future qualitative analyses. Finally, two patients who did not fill an OAC prescription had a stroke, and patient post-ED decisions in initiating medications may be another area of investigation.

It is critical to note that these data were collected according to the standards of prior AFF guidelines, and immediately prior to publication of the 2018 CAEP checklist [1], but the results appear discouragingly similar to earlier Canadian assessments, where only a minority of high-risk patients were appropriately anticoagulated upon ED discharge [7, 8]. The reasons behind the low rate have not been well-studied: it is possible that EPs do not feel that they have the time or resources to discuss the implications of DOAC, or that they underestimate the stroke risk, or overestimate the bleeding risk. The latter is likely to be partially overcome by the lower risk of bleeding with DOACs as compared to warfarin. Emergency physicians may also have deferred the DOAC initiation to longitudinal care providers, including primary care physicians, internists, or cardiologists. It is unclear, though, as reflected by the Niaz' data, whether patients consistently attend such care. A recent larger Ontario study illustrates that long-term OAC adherence is significantly enhanced if patients are prescribed OACs in the ED, rather than relying on downstream care providers to do so [9], and EPs may wish to consider these results rather than relying on other physicians to promote evidence-based anticoagulation. While Niaz' reported 17% anticoagulation rate is incompatible with the CAEP checklist [1], we are hopeful that these combined developments portend a substantially improved rate of future EP OAC prescribing.

Over the past decade, emergency medicine research has gradually crystallized the optimal management of patients with atrial fibrillation and flutter. National guidelines [1], which will be updated soon, and local initiatives [10], can both enhance care and improve outcomes, and there is

substantial potential for care improvement, which we hope to write about in future editorials.

Compliance with ethical standards

Conflict of interest None declared.

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