

New frontiers in Canadian atrial fibrillation management

Frank X. Scheuermeyer, MD, MHSc*

Atrial fibrillation and flutter (AFF) are the most common arrhythmias in emergency department (ED) patients,¹ and care appears to be variable.² Since 1999, when Michael and co-workers published a chart review of 289 ED patients with AFF,³ Canadian research has pioneered improvements in the safety and efficiency of managing this illness.

Although emergency physicians have traditionally followed cardiology guidelines,^{4,5} there is a realization that ED patients with AFF may be dissimilar to patients with stable AFF managed in outpatient settings. To address this issue, the Canadian Association of Emergency Physicians (CAEP), in conjunction with the Canadian Arrhythmia Network (CANet), created the first guidelines designed for managing any ED patient with AFF. Over the spring and summer of 2017, 20 physicians, both emergency physicians and cardiologists, developed and modified, in an iterative fashion, the guidelines published in this issue.⁶ This algorithm benefited from comments from more than 300 Canadian emergency physicians and cardiologists and has been supplemented by comments and tips to assist clinicians. Overall, the guidelines promote safe, efficient discharge of stable, low-risk patients, while rapidly identifying those at higher risk of adverse outcomes. A trio of Canadian ED-based investigations of patients with AFF, all in this issue, now supports these guidelines.⁷⁻⁹

The management of ED patients with AFF can be differentiated from conventional cardiology recommendations based on a number of key decision nodes.^{4,5} First, patients with an acute underlying medical condition such as sepsis or heart failure should be identified prior to starting traditional AFF management such as rhythm control or rate management with

atrioventricular nodal blockade.⁶ Unfortunately, patients with such underlying conditions, typically elderly patients or those with substantial comorbidities, are unlikely to benefit from such therapies and are more likely to experience adverse events than success.¹⁰ Instead, the CAEP/CANet guidelines recommend identification of such patients and then the management of the acute underlying issue. As such patients may comprise up to one-third of all ED patients with AFF,¹⁰ rapid selection and appropriate therapy is paramount.⁶

Second, while traditional guidelines have equivocated between rate and rhythm control for ED patients with AFF at low risk of stroke, the new guidelines promulgate a rhythm-first approach to achieve a normal sinus rhythm and to prevent unnecessary admissions quickly.⁶ In this issue of CJEM, Clinkard et al. describe a secondary multicentre analysis in two separate Canadian cohorts of 985 patients with AFF undergoing procedural sedation for electrical conversion and report that the adverse event rate was 3.3% in one cohort and 13.5% in the other.⁷ Although the adverse events were collected differently for each cohort, these two numbers may serve as clinically useful confidence intervals of the true rate and a reminder that such events must always be considered when planning sedations. Importantly, no patients died, required chest compressions or intubation, or required an otherwise unnecessary admission, and this should reinforce the message that procedural sedation and electrical countershock is a safe treatment for patients with AFF who have a low stroke risk.

Third, the new CAEP/CANet guidelines also emphasize that appropriate anticoagulation is critical and endorse the new CHADS-65 score. If a patient has heart failure, hypertension, or diabetes; had a prior

From the Department of Emergency Medicine, St. Paul's Hospital, and the University of British Columbia, Vancouver, BC.

Correspondence to: Dr. Frank X. Scheuermeyer, 1081 Burrard St, Vancouver, BC V6Z 1Y6, Canada; Email: frank.scheuermeyer@gmail.com

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stroke or transient ischemic attack; or is aged 65 years or older, they are considered CHADS-65 positive and are eligible for anticoagulation unless there is a compelling contraindication.⁶ Unfortunately, emergency physicians may not always recognize or appropriately manage patients with AFF at a high risk of stroke. To improve physician adherence with these evidence-based therapies, Barbic and co-workers describe a novel program that was developed by emergency physicians, cardiologists, and pharmacists and is supported by a computer-order algorithm and regular educational seminars. During an eight-month period, emergency physicians dramatically increased their rate of appropriate anticoagulation among vulnerable ED patients with AFF from 48.6% to 70.2%.⁸ Although this retrospective record review only took place in a single urban Vancouver ED and was underpowered with respect to serious downstream adverse events such as stroke and readmission, the magnitude of this improvement should encourage Canadian emergency physicians to champion similar initiatives to improve local care in this area.

Finally, traditional AFF guidelines have not addressed post-ED follow-up, and since the majority of patients would likely be discharged home, this uncertainty may create variable care patterns. The CAEP/CANet guidelines recommend that all discharged ED patients with a new diagnosis of AFF obtain follow-up with a family physician within one week and should also visit a cardiologist or internist within four to six weeks.⁶ From a large Ontario cohort with a robust analysis, Atzema and co-investigators demonstrated that there is substantial potential for improvement.⁹ Less than one-half of the 16,040 patients with newly diagnosed AF were seen within a week by any physician, and only one-quarter were seen by a primary care physician and specialist within one month. Worse yet, patients at a higher risk of stroke or death, especially those with comorbidities such as coronary artery disease, chronic lung or kidney disease, or prior stroke had significantly lower rates of appropriate follow-up. While the study does not speculate on the reasons behind this undesirable care discrepancy, emergency physicians should nonetheless be cognizant that their follow-up decisions should reflect both a patient's acute and chronic illnesses and ensure that vulnerable patients are appropriately transitioned to the community after ED discharge.

It is encouraging to view this new influx of Canadian research⁷⁻⁹ addressing the different aspects of care for ED patients with AFF. Importantly, clinicians now have evidence-based guidelines⁶ to standardize care and optimize outcomes for future patients with such illnesses.

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