EP News: Quality Improvement and Outcomes

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In this issue of **Heart**Rhythm, we present a new quarterly feature highlighting quality improvement in the delivery of heart rhythm care. These quarterly features will summarize key publications of relevance to the electrophysiology community and provide a forum for recognizing the growing importance of measuring, reporting, and improving the quality of heart rhythm care.

The Heart Rhythm Society (HRS) already has a long tradition of quality improvement. Historically, quality improvement at HRS has been grounded in strong leadership in health policy relating to heart rhythm care through various efforts, including engagement with stakeholder groups focused on quality, such as clinical registry programs, and in the development of HRS-led electrophysiology-specific performance measures. More recently, the HRS Board of Trustees has identified quality improvement as a particular area of strategic importance to the Society, with a specific charge to raise the level of expertise in quality improvement within our organization and among our membership.

The establishment of this feature in **Heart**Rhythm reflects the importance of quality improvement in our field. We support the Society's effort to contribute to better understanding of quality improvement in the heart rhythm community. We look forward to sharing these ideas and learning with you.

Piloting a multifaceted, electronic medical record–based intervention to improve prescription of anticoagulation (SUPPORT AF)

Kapoor et al (J Am Heart Assoc 2018;7:e009946, PMID 30371161) conducted a prospective quality improvement initiative to assess whether use of an electronic medical record–based intervention could improve use of oral anticoagulation for the prevention of atrial fibrillation–related stroke. The intervention had 2 parts. First, providers were informed of their oral anticoagulation-prescribing patterns relative to their peers. Second, electronic medical record messages were sent the day before they saw a patient with atrial fibrillation who was eligible for, but not receiving, oral anticoagulation. After 10 weeks, among the 227 providers, there was no change in oral anticoagulation utilization in either the cardiology (0.2% lower) or primary care (0.01% higher) providers relative to controls. *Based on these data, the authors conclude that the use of an electronic medical record–based intervention is feasible but, by itself, did not improve utilization of oral anticoagulation in their practice environment.*

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A multifaceted intervention to improve treatment with oral anticoagulants in atrial fibrillation (IMPACT-AF): An international, cluster-randomized trial

Vinereanu et al (Lancet 2017;390:1737, PMID 28859942) conducted a 2-arm, prospective, international, cluster-randomized, controlled trial to test the effectiveness of a multifaceted intervention to improve anticoagulation utilization in patients with atrial fibrillation. Centers (n = 48) were randomized 1:1 to a quality improvement educational intervention or usual care. The intervention involved the education of both providers and patients. The primary outcome was the change in the proportion of patients with atrial fibrillation and an indication for stroke prevention who were treated with oral anticoagulation. Oral anticoagulation increased in the intervention group from 68% at baseline to 80% at 1 year vs 64%–67% in the control group (absolute difference 9.1%; odds ratio 3.28; 95% confidence interval 1.67–6.44; $P = .0002$). There was also a reduction in the secondary outcome of stroke in the intervention group relative to the control group (hazard ratio 0.48; 95% confidence interval 0.23–0.99; $P = .0434$). *Based on these findings, the authors conclude that a multifaceted and multilevel educational intervention can improve stroke prevention in patients with atrial fibrillation across the globe.*

Prevention of arrhythmia device infection (the PADIT Trial results)

Krahn et al (J Am Coll Cardiol 2018;72:3098, PMID 30545448) conducted a cluster randomized crossover trial with waived consent that tested a strategy of conventional vs incremental periprocedural antibiotics for all cardiac implantable electronic device procedures. The conventional treatment included preprocedural cefazolin infusion, while the incremental treatment included preprocedural cefazolin plus vancomycin, intraprocedural bacitracin pocket wash, and oral cephalexin (500 mg 4 times per day) for 2 days postprocedure. The primary outcome was 1-year hospitalization for device infection in high-risk patients (any repeat procedures on an existing pocket) after adjustment for random cluster and cluster-period effects. Among 19,603 patients enrolled at 28 centers, 12,842 were high-risk procedures. Infection occurred in 1.03% receiving conventional treatment and 0.78% receiving incremental treatment. Among high-risk patients, the primary end point of hospitalization for infection occurred in 77 patients (1.23%) in the conventional arm and in 66 patients (1.01%) receiving incremental antibiotic treatment ($P = .26$). The analysis of subgroups did not identify any patient characteristics associated with benefit from incremental antibiotic therapy. *The authors conclude that device infection rates in contemporary practice are low and that a strategy of incremental antibiotics (bacitracin pocket wash and postprocedure cephalexin) did not significantly reduce infection risk in patients undergoing cardiac implantable electronic device procedures.*

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