

# Commentary: Smoke on the clotter



John Bozinovski, MD, MSc

From the Division of Cardiac Surgery, The Ohio State University Wexner Medical Center, Columbus, Ohio.  
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Address for reprints: John Bozinovski, MD, MSc, Division of Cardiac Surgery, The Ohio State University Wexner Medical Center, N816A Doan Hall, 410 West 10th Ave, Columbus, OH 43210 (E-mail: [jovan.bozinovski@osumc.edu](mailto:jovan.bozinovski@osumc.edu)).

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John Bozinovski, MD, MSc

### Central Message

Changing practice patterns in anticoagulation post-cardiac surgery is occurring in the absence of quality evidence—is it insufficient interest, resources, or both?

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Beller and colleagues examined anticoagulant (AC) use following cardiac surgery<sup>1</sup> by examining a subset of the Society of Thoracic Surgery database. The study does not provide evidence to guide choices; rather, it describes what we are actually doing for postoperative patients. By shedding light on past practices, it will alter the way we currently practice. Looking at 2 time periods (2011-2014 and 2015-2018), the authors found AC use to be stable overall but that the proportion of patients receiving non-vitamin K oral AC (NOAC) has increased. This increase in preference for a NOAC, over a vitamin K antagonist (VKA), is most pronounced in the biologic aortic valve replacement cohort but was still dramatic in the biologic mitral valve and coronary artery bypass cohorts. A strength of the study was the large number of patients examined, the focus on type of AC used, and the subgroups examined.

Use of NOAC as the AC of choice overall increased to 35% in the more current period examined (2015-2018), but in those receiving AC for biologic valves as the only putative indication (the study was unable to ascertain for certain the indication for AC use), we still prescribe VKA much more commonly (86.9% of the time or a ratio of 6.6:1), but even here use of NOAC increased over the 2 periods.

It remains controversial whether to anticoagulate biologic valves, not to mention what should be the duration of therapy, or agent of choice, if pursued. We are aware that the American College of Cardiology/American Heart Association guidelines regarding this are largely ignored, as evidenced by the study of Beller and colleagues.<sup>1</sup> Of the biologic valves, 68% did not receive AC postoperatively. Of the 32% of biologic valves that did receive AC postoperatively, 80% had other indications for AC, including atrial fibrillation or venous thromboembolism. Excluding these latter patients, and assuming the 68% of patients not getting AC had no other indication for AC, only 745 of the 8684 patients (8.5%) with biologic valves without other indication for AC received AC. This 8.5% of patients demonstrates that we as a community have limited faith in the American College of Cardiology/

American Heart Association guidelines<sup>2,3</sup> on this topic. Why is this so, when it is a Class IIa, Level of Evidence B recommendation?

There may be many reasons for this, including our faith in the quality of evidence used to make the recommendations and the presence of conflicting evidence. The supporting evidence for anticoagulation in biologic aortic valve replacement in the 2014 guidelines<sup>2</sup> includes 6 citations, of which one is an editorial,<sup>4</sup> 3 suggested no benefit for AC,<sup>5-7</sup> one of which is the only randomized control trial,<sup>5</sup> and 2 suggested benefit.<sup>8,9</sup> In one that suggested benefit there was, paradoxically, a 2.3-fold increase in the rate of bleeding without VKA.<sup>8</sup> The 2017 update of the guidelines<sup>3</sup> used more compelling studies favoring AC<sup>10,11</sup> but no randomized control trial.

The study of Beller and colleagues highlights that we are instituting practice patterns in the absence of quality evidence and despite moderately good evidence, essentially hoping that we are doing the right thing. Anticoagulation for biologic valves is an issue that has been debated for decades, and calls for the need for a prospective randomized trial on the subject have become reflexive clinical science etiquette without consequence. We are blowing smoke when what we need is to light a fire.

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