Atrial Fibrillation Post-Operatively Linked to Stroke Risk

By Gil Ross — February 22, 2016

A new, large study presented at the International Stroke Conference [2] in Los Angeles showed that post-operative atrial fibrillation, or an irregular heartbeat, was independently associated with an increased risk of ischemic stroke in the first 30 days post-op.

Ischemic strokes are those caused by an arterial blockage; the other type is hemorrhagic, caused by a burst blood vessel.

Entitled Postoperative atrial fibrillation and the short-term risk of ischemic stroke," the study was presented by lead author Gino Gialdini, MD, of the Weill Cornell Medical College Brain and Mind Research Institute in New York.

The study included over seven million inpatient surgery patients at acute care hospitals in California, New York, and Florida three out of the four largest states in the U.S., together representing 30% of the nation's population from January 2007 through November 2012. Among those surgeries, 103,000 patients (1.44 percent) developed new-onset atrial fibrillation, or A-fib, after surgery, and 17,000 (0.24 percent) had a stroke within 30 days.

After adjustment for demographic and vascular risk factors, people who developed post-operative A-fib were almost four times more likely to have a perioperative stroke (within 30 days of surgery) than those who remained in sinus rhythm (the regular rhythm most of us have normally).
With A-fib, the most common arrhythmia, the upper heart chambers (the atria) are not contracting in an organized regular fashion: they are "fibrillating," in no regular rhythm, and therefore the blood can stagnate and coagulate (clot). These small clots, when expelled to the ventricles and thence to the systemic circulation, can find their way to the medium- and small-arteries which supply the brain. When one blocks an artery, an ischemic stroke occurs. The agents that prevent (or reduce) these events are anticoagulants or "blood thinners."

Notably, the stroke risk with post-operative A-fib was seen for both cardiac and noncardiac surgery patients, but with a much higher risk for operations outside the heart. The hazard ratios were almost doubled after cardiac surgery, but increased over four-fold after noncardiac surgery. It's not clear why cardiac surgery presents a lower relative risk of A-fib than heart operations; one possibility is that cardiac surgery patients are often routinely treated with anticoagulants after surgery, which would be expected to decrease the risk of stroke for those in a-fib.

And then there's the question of duration of treatment.

Should these patients be treated post-operatively with anticoagulants for an indefinite period, or does the risk decline rapidly after surgery? There is no clinical trial evidence to support anticoagulation for any and all A-fib found after surgery, but a reasonable approach is to do additional monitoring with prolonged heartbeat monitors as outpatients (Holter monitor) and go from there.

Limitations of the study included its retrospective and administrative claims-based design, lack of specific stroke diagnosis, and no outpatient data to confirm that patients had never previously been diagnosed with A-fib or data on duration of A-fib or medication at discharge. Also, age is a major driver of A-fib and stroke risk, and might not have been entirely adjusted away by analysis. As can always be said when data are presented based on a retrospective, data-analysis study, prospective data to confirm the findings would be needed. And of course, this is a meeting presentation and has not yet been published in a peer-reviewed journal.

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