

Extended VTE Prophylaxis Helpful After Surgery

BY BRUCE JANCIN

SAN DIEGO — Two-thirds of patients placed on thromboprophylaxis after total hip or knee replacement surgery receive it for 2 weeks or less—and their venous thromboembolic event rate is markedly higher than in patients on prophylaxis for longer, according to a retrospective study of more than 3,000 patients.

Moreover, the rate of major bleeding in this study was fourfold greater in patients on prophylaxis for 14 days or less than in those on longer-term prophylaxis, contrary to the conventional wisdom that major bleeding risk rises with increasing duration of prophylaxis, Dr. Philip Wells said at the annual meeting of the American College of Chest Physicians.

He reported on a study of 3,195 adults in a U.S. managed care database who underwent total hip or knee replacement in 2004-2006 and received prophylaxis against venous thromboembolic events (VTE) with an ACCP-recommended agent for at least 1 day, starting within 24 hours after surgery. The patients represented only 43% of the hip/knee replacement patients in the database, meaning that most patients hospitalized for major orthopedic surgery did not receive any guideline-recommended VTE prophylaxis.

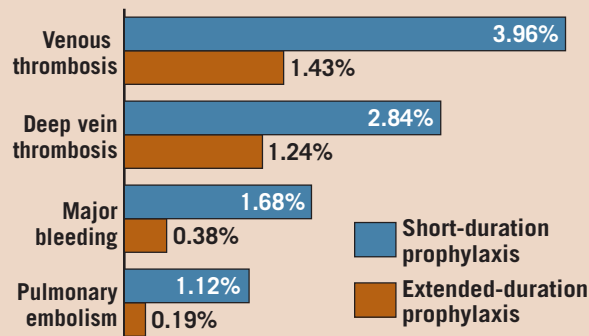
ACCP guidelines recommend extending thromboprophylaxis beyond 10 days and up to 35 days after total hip or knee replacement surgery, but the findings suggest that “the concept of extended prophylaxis may not have filtered into widespread clinical use,” said Dr. Wells, professor

of medicine at the University of Ottawa and chair of the department of medicine at Ottawa Hospital.

A total of 67% of patients received what Dr. Wells termed “shorter-duration” prophylaxis of 14 days or less. Their incidence of VTE during the next 3 months was 3.96%, significantly greater than the 1.43% rate among patients with extended-duration prophylaxis for 15 days or longer.

The shorter-duration prophylaxis group also had a more than twofold increased

Postsurgical Thromboembolic Event Rates Drop With Longer Prophylaxis



Note: Based on a retrospective study of 3,195 adults.
Source: Dr. Wells

rate of deep vein thrombosis, a sixfold greater incidence of pulmonary embolism, and a fourfold increase in major bleeding. (See box.) All of these differences were statistically significant. However, the difference in minor bleeding rates—a 3.91% incidence with shorter-duration prophylaxis vs. 2.98% with extended prophylaxis—did not reach significance.

Upon adjustment for potential confounders including age, baseline comorbidity, and oral vs. injectable prophylaxis, extended-duration prophylaxis remained beneficial. The risk of VTE with extended prophylaxis was 60% lower than with shorter-duration therapy. The risks of pulmonary embolism and major bleeding in the extended prophylaxis group were one-fifth and one-quarter of those who had shorter-duration prophylaxis.

When outcomes were compared between the 831 patients who received more than 21 days of thromboprophylaxis and those with 1-21 days of pro-

phylaxis, extended prophylaxis still provided significant advantages. These included deep vein thrombosis and pulmonary embolism rates of 1.2% and 0.12%, respectively, compared with 2.7% and 1.06% in patients who had up to 21 days of prophylaxis.

A total of 58% of major bleeding events in the shorter-duration prophylaxis group occurred during the first 3 weeks post surgery, and roughly half of these early major bleeds happened in the first 2 days.

Even when Dr. Wells excluded all patients who had a major bleeding event, there was still a significant difference in VTEs between the shorter- and extended-duration prophylaxis groups. “It wasn’t that the bleeders were the ones getting the clots. Shorter-duration prophylaxis definitely seems to be associated with a higher risk of clotting,” he said.

Several audience members expressed frustration that decisions about postsurgical VTE prophylaxis typically rest in the orthopedic surgeons’ hands. They complained that many surgeons are reluctant to employ guideline-recommended prophylaxis because if a patient on prophylaxis develops bleeding, it will be blamed on the surgeon.

“These data show that in actual life, bleeding is not a risk with extended prophylaxis. The surgeons make the decision. All you can do is show them the information and hope they believe it. It’s their patient. But if they don’t believe real data, what can I say?” Dr. Wells replied. ■

Disclosures: The study was funded by Johnson & Johnson and Bayer Corp. Dr. Wells serves as a paid consultant to and is on the speakers bureaus for both firms.



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Surgical Safety Training Program Can Foster Increased Vigilance

A training program modeled on airline industry initiatives can change behavior and cultivate a culture of safety in the operating room, based on data from a survey and follow-up study.

Such training increased acceptance of perioperative checklists, led to more self-reporting of “unsafe conditions and near misses,” and enhanced empowerment in two medical facilities.

“The introduction of CRM [crew resource management] training, combined with other initiatives, enhances personal commitment to patient safety and appears to alter behaviors relative to checklist use and self-reporting,” reported Dr. Harry C. Sax of the department of surgery at Brown University and the Miriam Hospital, both in Providence, R.I., and his colleagues (Arch. Surg. 2009;144:1133-7).

They reported the results of a CRM program begun at the University of Rochester (N.Y.) Strong Medical Center in 2003, and at Brown University’s Miriam Hospital in 2005. Of the 858 partic-

ipants, half were nurses, 28% ancillary personnel, and 22% physicians.

A 10-item perioperative checklist “modeled on preflight aviation checklists,” was posted in each operating room. It listed all participants and required signoffs from two team members regarding items such as surgical site and side verifications, use of perioperative antibiotics, deep vein thrombosis prophylaxis, and beta-blockade, Dr. Sax and his colleagues wrote. A survey that measured attitudes toward safety was given immediately before and after training, and again at least 2 months later.

The study found that “consistent checklist use rose from 75% in 2002 to 100% in 2007 and beyond,” and “self-reporting of incidents rose from 709 per quarter in 2002 to 1,481 per quarter in 2008.”

—Roxanna Guilford-Blake

Disclosures: Dr. Sax serves as a medical consultant to Indelta Learning Systems Inc., which codeveloped the CRM training; one coauthor is an Indelta employee.