MedicalXpress

New study shows patients with coronary artery disease

August 30 2011

Thrombotic (clotting) and bleeding events are complications that may occur after surgery. With the aging population in the western world, there are more patients undergoing orthopedic surgery than ever before. This makes understanding the risk of complications from orthopedic surgery exceedingly important. However, there is a lack of data investigating the incidence of thrombotic and bleeding complications in orthopedic surgery.

The new study by investigators at NYU School of Medicine was comprised of 3,082 patients undergoing orthopedic surgery of the hip, knee, and spine. The study shows that thrombotic and bleeding complications occurred in 5.8% and 5.4% of all subjects, respectively. Coronary artery disease, cancer, and peripheral artery disease were independent predictors of both thrombotic and bleeding events. Increasing age and kidney disease were strong predictors of thrombotic events, while female sex was a significant predictor of major bleeding.

"Thrombotic and bleeding complications can occur in the setting of orthopedic surgery," said Brandon S. Oberweis, MD, lead author and medical resident at NYU School of Medicine. "Our findings help elucidate specific risk factors for these perioperative complications, helping to provide physicians with the ability to properly risk stratify patients when undergoing orthopedic surgery."

To properly assess the potential benefit/risk trade-off during the perioperative period, one must know the true incidence of thrombotic

and bleeding events following any surgery. Previous research has shown an increase in short- and long-term cardiovascular events and all-cause mortality in patients with a perioperative thrombosis (heart attack).

On the opposite end of the clinical spectrum, major bleeding is an important consideration during the perioperative setting. Surgeons are very cognisant of the bleeding risk and great emphasis is placed to prevent perioperative bleeding.

The trade-off between thrombotic and bleeding risk is exemplified regarding the use of antiplatelet drugs (such as aspirin), which may lower the risk of thrombotic events while increasing the risk of bleeding events.

"In addition, our data shows a subgroup of patients undergoing orthopedic surgery with established coronary artery disease, who were more than four times as likely to suffer from a thrombotic event and twice as likely to suffer from a bleeding event as those patients without coronary artery disease," said Dr. Oberweis.

Despite the increased risk of thrombotic events, only 8% of subjects with coronary artery disease were on aspirin preoperatively. Interestingly, among patients on aspirin, there was a lowering of the risk of thrombotic events (7.1% versus 12.1%); however, this finding did not reach statistical significance. No significant impact on bleeding was observed with the use of aspirin.

"Our data is suggestive of a potential role of aspirin in the perioperative setting which may help lower the risk of perioperative complications," said senior author, Jeffrey S. Berger, MD, assistant professor of Medicine and director of Cardiovascular Thrombosis at NYU School of Medicine. "Even though this was a small study population of patients on aspirin, future studies targeting high-risk individuals for the reduction of

thrombotic events with aspirin are certainly warranted," said Berger.

Provided by European Society of Cardiology