MedicalXpress

Study raises doubts about value of heart ultrasound before elective surgery

August 18 2011

A new study has found no evidence that patients who had a heart ultrasound known as an echocardiogram before major surgery had improved survival rates one month or one year after their operation.

Some groups of patients actually had worse survival rates, according to Dr. Duminda Wijeysundera, a scientist at the Li Ka Shing Knowledge Institute of St. Michael's Hospital and the Institute for Clinical Evaluative Sciences.

His study, published in the British Medical Journal, adds to a growing body of evidence that echocardiograms may not be helpful in predicting which patients are likely to have complications after major surgery and therefore require more specialized care.

"These findings have important implications, especially since thousands of people undergo surgery around the world every day," said Dr. Wijeysundera, who is also an anesthesiologist at Toronto General Hospital.

"Given that echocardiography may actually cause harm, physicians should reconsider its role for patients undergoing elective surgery. This study also highlights the importance of rigorously evaluating how tests are used in medicine and the fact that more testing is not always better."

An echocardiogram (ECHO) uses sound waves to create a picture of the heart, showing the shape, texture and movement of heart valves as well

as the size of the heart chambers and how well they are working.

Dr. Wijeysundera found that 15 per cent of the almost 265,000 Ontario residents who underwent major surgery between 1999 and 2008 had echocardiograms beforehand. That makes the echocardiogram one of the most commonly ordered pre-operative tests.

Despite its common use, there was no evidence that the patients who had echocardiograms had improved survival at one month or one year after surgery.

Some groups of patients appear to do worse if they had undergone echocardiography. If a patient had two or fewer risk factors for postoperative cardiac complications and had not undergone cardiac stress testing, having an echocardiogram was associated with a higher chance of dying within one year after surgery. Risk factors could include such conditions as diabetes, kidney disease or a history of heart disease.

Dr. Wijeysundera and his colleagues have previously shown that if patients had at least one risk factor for postoperative cardiac complications, they had better survival after surgery if they had undergone stress testing before their operation. Despite these better outcomes with stress testing, physicians in Ontario are 50 per cent more likely to order an echocardiogram before surgery, perhaps because they are often easier to order quickly.

Dr. Wijeysundera said there are some potential reasons for these findings. Since echocardiograms do not perform that well in distinguishing between high-risk and low-risk patients, physicians may have been incorrectly reassured that some high-risk patients could safely undergo surgery with no additional specialized care.

In addition, some physicians may have incorrectly thought that some low-

risk patients needed specialized care and therefore given them unnecessary and potentially harmful interventions.

"If echocardiography results in patients having a better chance of surviving after major surgery, its increased use is justified," Dr. Wijeysundera said. "If it does not, the relatively common use of echocardiography represents an unnecessary healthcare cost that may also unnecessarily delay scheduled surgeries."

Provided by St. Michael's Hospital