Underweight patients face increased risks during defibrillator implantation

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Patients who are underweight or small in stature are twice as likely to experience complications or die during insertion of an implantable cardioverter-defibrillator (ICD) compared to obese and normal-weight patients, according to research presented today at the American College of Cardiology's 61st Annual Scientific Session. The Scientific Session, the premier cardiovascular medical meeting, brings cardiovascular professionals together to further advances in the field.

ICDs are small, battery-powered devices implanted in the chests of people at risk for sudden cardiac arrest. More than 100,000 ICDs are implanted in the U.S. each year.

The study, which examined more than 83,000 cases, is the first large-scale study to investigate how body size may influence patient outcomes after implantation of an ICD. It showed that smaller patients—based on low body mass index—had longer hospital stays, more complications and increased risk of dying during or shortly after an ICD implantation procedure.

"If you are having a defibrillator placed, being underweight may put you at risk for adverse events from the implantation procedure," said Jonathan Hsu, MD, a fellow in cardiac electrophysiology at the University of California, San Francisco and the study's lead investigator. "Having a lower body mass index may put you at higher risk of having complications, staying in the hospital for longer and even dying from the procedure."

Obese patients were not found to be at high risk for adverse events compared to normal-weight patients.

Dr. Hsu said the findings give doctors and patients a clearer understanding of the risks of ICD implantation. "Body size is something that's easily measurable," he said. "Talking with patients about the benefits and risks is an important part of what we do, and implanters can use this information in counseling patients who may be at higher risk."

The most common complications seen in smaller patients were a collapsed lung and hematoma, or blood pooling in the pocket where the device is implanted.

Knowing the risks specific to smaller patients could help doctors devise solutions to reduce those risks, said Dr. Hsu. For example, doctors could alter their approach to accessing the chest cavity to reduce the risk of a collapsed lung, hold anticoagulation medications ito reduce the risk of bleeding, or use compression bandages to prevent blood from collecting in the implantation pocket.

Dr. Hsu said the findings could have implications for other types of procedures, as well.

"Perhaps this pattern isn't just in cardiovascular patients or ICD implant patients. It's possible that we haven't been looking at underweight patients and their risks closely enough because we've been focusing so much attention on obese patients," Dr. Hsu said, adding that the findings are in line with previous studies showing that underweight patients are at increased risk of complications and death after higher-risk cardiac surgery compared to normal-weight patients.

Although the data did not allow researchers to assess why smaller patients are at higher risk, Dr. Hsu said potential contributing factors

include frailty, malnutrition and coexisting conditions, such as cancer.

Provided by American College of Cardiology