S-ICD associated with 92 percent reduction in lead-related complications typical in patients with ICDs

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The randomized multicenter ATLAS trial of more than 500 persons has

found that subcutaneous implantable cardioverter defibrillators (S-ICDs) reduce perioperative, lead-related complications without significantly compromising the effectiveness of ICD shocks, but with more early postoperative pain and a trend for more inappropriate shocks. The study is published in *Annals of Internal Medicine*.

ICDs improve survival in patients at risk for cardiac arrest but are associated with intravascular lead-related complications. The S-ICD, with no intravascular components, was developed to minimize lead-related complications.

Researchers from McMaster University conducted a randomized multicenter trial of 544 persons with a primary or secondary prevention indication for an ICD. The authors found that S-ICD usage demonstrated a 92 percent reduction of lead-related complications and prevented most lead-related perioperative complications, including myocardial perforation, which can lead to death. They also reported a modest reduction in system reliability with the S-ICD, specifically a trend toward more inappropriate shocks.

After a mean follow-up of 2.5 years, there was a nonsignificant 22 percent reduction in the need for surgical ICD revision with the S-ICD and ongoing, longer-term follow-up of ATLAS participants will evaluate the effect that the S-ICD will have on chronic ICD performance and the need for ICD reoperation.

More information: Jeff S. Healey et al, Perioperative Safety and Early Patient and Device Outcomes Among Subcutaneous Versus Transvenous Implantable Cardioverter Defibrillator Implantations, *Annals of Internal Medicine* (2022). DOI: 10.7326/M22-1566

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