

Effectiveness of implanted defibrillators may depend on patient's age

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They extended survival in those at high risk for sudden cardiac death, but those over 70 saw less benefit, study found.

(HealthDay)—Implantable cardioverter-defibrillators (ICDs) prolong survival among heart patients who face a high risk for sudden cardiac death, a new review of research indicates.

But, ICDs may not benefit all patients to the same degree, as their effectiveness seems to diminish somewhat with the advancing age of the patient, the review authors said.

The investigators caution that the studies included in the review tended to be skewed toward younger patients. This makes it difficult to say with certainty how patients in their 70s and 80s might fare once they have the procedure.

"The important trials that established the survival benefits of ICDs definitely show a clear benefit," said study author Dr. Paul Hess, a clinical fellow in the department of cardiology at Duke University Medical Center in Durham, N.C. "But the problem is that the patients we are currently implanting are often older than the patients who were in these studies.

"And in the current absence of sufficient data concerning patients around 75 and up, we can only say that the picture for [older patients](#) is unclear," Hess added. "Which means that physicians and their older patients really need to have a careful conversation about the benefit of ICDs vis-a-vis that patient's particular risk. Because those who are relatively healthy may do well, while others who are more frail and have a high [disease] burden may not. We just don't know."

Hess and his colleagues report their findings in the March issue of *Circulation: Cardiovascular Quality Outcomes*.

According to the American Heart Association, an ICD is a small, battery-operated device that is implanted and wired directly to the [heart](#) to monitor for [irregular heart rhythms](#) or slow heartbeats.

The goal is to intervene immediately to prevent sudden death or [heart attack](#) among patients at high risk for dangerous heartbeat irregularities.

Whenever a chaotic or overly fast heartbeat is detected, an ICD delivers an electrical shock designed to quickly restore a normal rhythm. When detecting slow beat patterns, newer ICDs are also designed to operate like a pacemaker by stimulating a faster heart rate.

The study authors noted that more than 40 percent of ICD patients are 70 or older at the time they undergo surgery. More than 10 percent are 80 or older.

By contrast, almost 90 percent of the 3,500 participants enrolled in the five studies under review were under the age of 75. And while patient age ranged from under 55 to well over 75, the overall average age of the patient pool was just 62.

Roughly half the participants received an ICD because they had been deemed at [high risk](#) for [sudden cardiac death](#). Risk factors included having already experienced heart failure, or having suffered a severe weakening of the heart's ability to sufficiently pump blood. The other half did not have the device implanted.

Each patient was tracked for an average of 2.6 years. During that time, more than a fifth of those who received an ICD died, compared to more than a quarter of those who did not get an ICD.

Overall, the researchers found that those who got ICDs were less likely to die than those who did not, seemingly regardless of age.

However, the researchers also said that ICDs seem to offer poorer survival rates among older patients, perhaps because older patients tend to have additional health complications alongside heart disease. And the researchers warned that given the small pool of older patients, it could not be ruled out that ICDs may actually provide little or no survival benefit among patients over the age of 70.

"We really need more studies to look at this question more carefully so we can shed some light on how ICDs work among older patients," said Hess.

"Meanwhile, I would say that it's possible that chronological age may not be the only important measure to consider, that how healthy a person is and how large their burden of additional disease—what we call 'biologic age'—may be really important to take into account when considering

whether an ICD is right for someone in their 70s or older," he said.

That thought was seconded by Dr. Charles Swerdlow, a cardiac electrophysiologist and clinical professor of medicine at University of California, Los Angeles, and Cedars Sinai Heart Institute in Los Angeles.

"Patients in clinical trials are not necessarily the same as patients in clinical practice," he said. "By definition, studies tend to have many exclusion criteria, so that patients with [heart disease](#) who also have cancer or renal failure are not included. That means that the real world of ICDs may be handling a much sicker population, particularly among older patients.

"So, it does appear to be that most [patients](#) without [other major diseases] are likely to benefit from ICD therapy," Swerdlow said. "But physicians should really pay attention to 'biologic age,' to assess whether a patient's overall health is likely to help or hinder ICD survival."

More information: There's more on implantable cardioverter-defibrillators (ICDs) at the [American Heart Association](#).

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