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## Older age associated with risk of complications, death after implantation of cardiac devices

Older patients may be more likely to die in the hospital following the implantation of defibrillators or pacemakers, according to a report in the April 12 issue of *Archives of Internal Medicine*, one of the JAMA/Archives journals. More than one-fifth of cardiac devices appear to be implanted in individuals age 80 and older, despite the fact that most clinical trials have not included adults in this age group.

"Implantable cardiac devices have been increasingly used in primary prevention of sudden cardiac death among patients with systolic heart failure, largely on the basis of favorable results from large multicenter clinical trials," the authors write as background information in the article. One such device is an implantable cardioverter defibrillator, which monitors the heart's rhythm and delivers electrical shocks if needed to restore normal heart function. Defibrillators or pacemakers are often used to coordinate the actions of the heart's ventricles in a procedure known as cardiac resynchronization therapy.

"However, it has become increasingly apparent that certain patient subgroups may not benefit from device implantation; for example, use of implantable cardiac defibrillators in patients with renal failure and in those with advanced heart failure symptoms has not been associated with a survival benefit," the authors write. Because the average age in major clinical trials has ranged from 58 to 67 years and some have specified an upper age limit of 80 years, limited data are available on the use of these devices in older adults.

Jason P. Swindle, M.P.H., then of Saint Louis University School of Medicine, and colleagues analyzed data from 26,887 adults who were hospitalized with a diagnosis of heart failure and underwent implantation of a defibrillator or cardiac resynchronization therapy in 2004 or 2005.

The median (midpoint) age of all patients was 70 years. Patients age 80 and older accounted for 17.5 percent of the procedures (4,694 patients), including 992 patients (21.1 percent) who were older than 85 years and 309 patients (6.6 percent) who were 89 years or older. In-hospital

death rates increased from 0.7 percent among patients younger than 80 years to 1.2 percent among those age 80 to 85 and 2.2 percent among those older than 85 years.

"We found that older patients were less likely to have a concomitant cardiac procedure or a high comorbidity score, suggesting that these patients may be, in fact, somewhat more carefully selected than the younger cohort," the authors write. "However, older patients had slightly more complications related to the device procedure."

"Given trends in the demographics of heart failure and the costs of device therapy, additional studies are required to clarify the appropriateness of device implantation in older patients with heart failure, as well as the merits of less invasive options," they conclude.

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