

Risk of death has decreased for children initially treated with dialysis for ESKD

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In a study that included more than 20,000 patients, there was a significant decrease in the United States in mortality rates over time among children and adolescents initiating end-stage kidney disease treatment with dialysis between 1990 and 2010, according to a study in the May 8 issue of *JAMA*. The study is being released early online to coincide with its presentation at the Pediatric Academic Societies annual meeting.

"Individuals with end-stage [kidney disease](#) (ESKD) face a significantly shortened [life expectancy](#). In no group of ESKD patients is the loss of potential years of life larger than in [children](#) and adolescents. Although transplant remains the treatment of choice to maximize survival, growth, and development, 75 percent of children with ESKD require treatment with dialysis prior to receiving a kidney transplant. Dialysis is therefore a life-saving therapy for children with ESKD while they await transplant. Nevertheless, all-cause [mortality rates](#) in children receiving maintenance dialysis are at least 30 times higher than the general pediatric population, with even higher relative risks in very young children," the authors write. "There have been substantial improvements in the care of children with ESKD between 1990 and 2010. However, to our knowledge, it is not known if mortality has changed over time in the United States, particularly in recent years."

Mark M. Mitsnefes, M.D., M.Sc., of Cincinnati Children's Hospital Medical Center, and colleagues conducted a study to determine if all-cause, cardiovascular, and infection-related mortality rates have changed

between 1990 and 2010 among patients younger than 21 years of age with ESKD initially treated with dialysis and if changes in mortality rates over time differed by age at treatment initiation. The researchers used data from the United [States Renal Data System](#). Children with a prior [kidney transplant](#) were excluded.

The researchers identified 23,401 children and adolescents who met study criteria. Crude mortality rates during dialysis treatment were higher among children younger than 5 years at the start of dialysis compared with those who were 5 years and older. The authors found that the all-cause mortality risk decreased progressively over calendar time for both those younger than 5 years and those 5 years and older at initiation. There was also a decrease over calendar time for cardiovascular and infection-related mortality risk among children younger than 5 years at initiation and among those 5 years and older.

"Numerous factors may have contributed to the observed reductions in mortality risk over time. Improved pre-dialysis care, advances in dialysis technology, and greater experience of clinicians may each have played a role," the authors write.

"Almost all children initiating ESKD treatment are considered eligible for transplant. However, most will require dialysis during their lifetime, either before transplant or after allograft loss. In the United States, there was a significant decrease in mortality rates over time among children and [adolescents](#) initiating ESKD treatment with dialysis between 1990 and 2010. Further research is needed to determine the specific factors responsible for this decrease."

More information: *JAMA*. 2013;309(18):1921-1929

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