

Study finds changes in incidence of end-stage renal disease from lupus nephritis

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New research documenting changes in the incidence and outcomes of end-stage renal disease (ESRD) in the U.S. between 1995 and 2006, found a significant increase in incidence rates among patients 5 to 39 years of age and in African Americans. A second related study—the largest pediatric lupus nephritis-associated ESRD study to date—revealed high rates of adverse outcomes among children with ESRD due to lupus nephritis. Despite novel therapies, outcomes have not improved in over a decade. Both studies now appear online in *Arthritis & Rheumatism*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology (ACR).

More than 300,000 Americans are diagnosed with systemic lupus erythematosus (SLE), a chronic autoimmune disease that causes widespread inflammation, extreme fatigue, joint pain, and organ damage. Approximately 15% to 20% of all cases of SLE occur among children. Medical evidence has shown that up to 60% of adults and 80% of children with SLE develop nephritis—a potentially serious complication of lupus in which inflammation of the kidney could lead to renal failure. Prior studies report 10% to 30% of patients with lupus nephritis progress to ESRD within 15 years of diagnosis, despite aggressive treatment.

"Our studies examined trends in the incidence and outcomes of ESRD due to lupus nephritis for both adults and children in the U.S.," said lead study author Karen Costenbader, MD, MPH, from Brigham and Women's Hospital in Boston, Massachusetts. Researchers identified patients with lupus nephritis ESRD using data (1995-2006) from the U.S. Renal Data System, a national registry of patients who receive renal dialysis or [kidney transplantation](#). Demographic and clinical characteristics, changes in rates of waitlisting for kidney transplant, kidney transplantation data, and all-cause mortality were examined.

The research team identified 12,344 cases of

lupus nephritis ESRD with a mean age of onset of 41 years; 82% were female and 50% were African American. During the study period standardized incidence rates (SIRs) increased significantly among patients 5 to 39 years of age, African Americans, and in the U.S. Southeast. In fact, African Americans had a SIR of 6-7 times that of white patients. Researchers also noted that rates of pre-emptive kidney transplantation at ESRD onset slightly increased, but kidney transplantation rates within the first three years of ESRD declined. Rates of mortality did not change in over a decade of evaluation.

In the study specifically examining outcomes among children with lupus nephritis-associated ESRD, there were 583 cases identified and the mean age of onset was 16.2 years. Of those children with ESRD, 51% were African American, 39% were white, and 24% were Hispanic. Dr. Linda Hiraki, lead study author, with Dr. Costenbader and colleagues determined that within five years of ESRD onset 49% of children were wait-listed for kidney transplant, 33% received a kidney transplant and 22% died. The primary causes of mortality among children with ESRD were cardiopulmonary complications (31%) and infections (16%); risk of mortality in African American children was almost double that of white children.

While advances in treatment, such as preemptive kidney transplantation at ESRD onset, have been made in recent years, researchers found no improvement in outcomes. The team reported higher incidence rates in younger patients (ages 5-19 and 20-39 years), among [African Americans](#), and in the Southern portion of the U.S. Age, race, ethnicity, insurance, and geographic region were associated with significant variation in 5-year wait-listing for kidney transplant, kidney transplantation and mortality among children with ESRD. "The changing demographics and poor survival rates highlight the ongoing challenge of caring for these patients," concluded Dr. Costenbader. "Further

research is urgently needed to identify modifiable risk factors and interventions that can improve incidence rates and outcomes for children and adults with [lupus nephritis](#) ESRD."

More information: Article: "Trends in the Incidence, Demographics and Outcomes of End-Stage Renal Disease Due to Lupus Nephritis in the U.S., 1995-2006." Karen H. Costenbader, Amrita Desai, Graciela S. Alarcón, Linda T. Hiraki, Tamara Shaykevich, M. Alan Brookhart, Elena Massarotti, Bing Lu, Daniel H. Solomon and Wolfgang C. Winkelmayr. *Arthritis & Rheumatism*; Published Online: March 28, 2011. [DOI: 10.1002/art.30350](https://doi.org/10.1002/art.30350)

Article: "End-Stage Renal Disease due to Lupus Nephritis among Children in the U.S., 1995-2006." Linda T. Hiraki, Bing Lu, Steven R. Alexander, Tamara Shaykevich, Graciela S. Alarcón, Daniel H. Solomon, Wolfgang Winkelmayr and Karen H. Costenbader. *Arthritis & Rheumatism*; Published Online: March 28, 2011. [DOI: 10.1002/art.30293](https://doi.org/10.1002/art.30293)

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