

Patients receiving dialysis are at a heightened risk for sudden cardiac death

November 14 2010

Approximately 500,000 Americans require dialysis to treat kidney disease; of that population nearly half of the deaths that occur are caused by cardiovascular disease. Dialysis patients are at elevated risk for sudden cardiac death, but physicians are unclear why these deaths occur because little research has been done to examine how to best manage heart disease in this high-risk population.

Northwestern Medicine cardiologist Rod Passman, MD, medical director for the Center for Atrial Fibrillation at the Bluhm Cardiovascular Institute of Northwestern Memorial Hospital will present a paper at the American Heart Association's Scientific Sessions being held November 13 through 17 in Chicago about [sudden cardiac death](#) in dialysis patients. Passman is working to increase understanding within the medical community about this heightened mortality risk and how to prevent sudden cardiac death among this rapidly growing patient population.

"Dialysis patients have extraordinarily high [mortality rates](#) with cardiac disease accounting for 43 percent of deaths in this population; data indicates that approximately 27 percent of the mortalities are due to sudden cardiac death," said Passman, who is also an associate professor of cardiology at Northwestern University's Feinberg School of Medicine. "Patients on dialysis are excluded from clinical trials examining sudden cardiac death because of their [kidney disease](#). The lack of research complicates clinicians' ability to understand the connection between renal disease and cardiovascular disease. The medical community needs to stop neglecting this community of patients because it is a rapidly

growing group."

Sudden cardiac death is unexpected natural death from a cardiac cause within a short time period, generally less than an hour from the onset of symptoms in a person without prior condition that would appear fatal. In most cases, sudden cardiac death occurs because of ventricular arrhythmias (abnormal heart rhythms), including ventricular tachycardia (VT) or ventricular fibrillation (VF).

"Risk of cardiac arrest in dialysis patients is related to age and dialysis duration," said Passman. "A study by the United States Renal Disease Data System (USRDS) indicates longer dialysis duration is associated with higher mortality. This data also leads us to believe that end-stage renal disease is a primary promoter of cardiac disease and increased risk for sudden cardiac death."

By analyzing USRDS data, Passman and other researchers are beginning to better understand how cardiovascular disease affects renal patients and developing plans for preventing sudden cardiac death. "The more understanding we gain in regards to why these patients are dying from sudden cardiac death, the better chance we have to save them," Passman explained. "The best methods for prevention are medicinal options, including beta-adrenergic blockers, angiotensin converting enzyme (ACE) inhibitors and angiotensin type II receptor blockers (ARB), or both external and implantable defibrillators."

Data also indicates a connection between potassium levels in a patient's dialysate prescription and sudden cardiac death. Patients who suffered a cardiac arrest during dialysis were twice as likely to be on low-potassium dialysate versus higher levels of potassium, which were associated with the best survival rates. According to Passman, clinicians should evaluate and modify dialysate prescription on an ongoing basis in an effort to minimize risk of sudden cardiac death.

By highlighting the issue of sudden cardiac death in dialysis patients, Passman hopes that he and other physicians will be able to better understand this unique patient population. "There is very little research related to prevention of sudden cardiac death in dialysis patient; this group remains a mystery in terms of medical research, even though their numbers are growing," said Passman. "The lack of research and study of cardiovascular disease in kidney patients is a problem that must be addressed. By understanding why [dialysis patients](#) are at such great risk for sudden [cardiac death](#), we can begin to develop better standards for prevention."

Provided by Northwestern Memorial Hospital

Citation: Patients receiving dialysis are at a heightened risk for sudden cardiac death (2010, November 14) retrieved 5 May 2024 from <https://medicalxpress.com/news/2010-11-patients-dialysis-heightened-sudden-cardiac.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--