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Press Release

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REMOVAL OF HEART MEDICATIONS BY DIALYSIS MAY INCREASE KIDNEY FAILURE PATIENTS' RISK OF DYING PREMATURELY

The extent to which different beta blockers are removed by dialysis varies considerably

Highlights

- Among kidney failure patients on dialysis, beta blockers that are easily removed from the circulation through dialysis were linked with a higher risk of premature death than beta blockers that are not easily removed through dialysis.

Beta blockers are the most commonly prescribed cardiovascular medications among dialysis patients.

Washington, DC (October 30, 2014) — Dialysis patients who take heart medications that are easily removed from the circulation through dialysis may be at increased risk of dying prematurely compared with patients whose heart medications are more difficult to remove. The findings come from a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (JASN).

Beta blockers—drugs used to control heart rhythm, treat angina, and reduce high blood pressure—lower the risk of premature death among people with heart disease who are not receiving dialysis. Beta blockers differ in their dialyzability, or the extent to which they are removed through hemodialysis, and experts suspect that if the filtering effects of dialysis remove these important drugs from the circulation, patients can't experience their full benefit.

Matthew Weir MD, FRCPC, MSc (Western University, in Ontario, Canada) and his colleagues analyzed health information from patients in Canada who had been prescribed a beta blocker that's easily removed by dialysis compared with those whose beta blockers aren't readily removed by dialysis.

The high dialyzability group included 3,294 patients initiating dialysis with atenolol, acebutolol, or metoprolol. The low dialyzability group included 3,294 patients initiating dialysis with bisoprolol or propranolol. Initiation of a high vs. low dialyzability beta blocker was linked with a 1.4-increased risk of dying within 180 days. In an additional analysis of

more than 27,000 patients who were not receiving dialysis, there was no difference between these 2 groups of drugs and premature death. This suggests that the presence of dialysis was an important part of the relationship between bisoprolol/propranolol beta blockers and lower risk of premature death.

“Although we can’t draw causal relationships from our observational study, we did see the relationship that we hypothesized: the risk of death was higher in patients whose beta blocker was readily removed from their circulation by hemodialysis,” said Dr. Weir. “Changing prescriptions from an easily-removed drug to a difficult-to-remove drug might be a simple way to lower the risk of premature death for people receiving hemodialysis.”

In an accompanying editorial, Gautam Shroff and Charles Herzog (Hennepin County Medical Center and University of Minnesota, in Minneapolis) noted that because beta blockers have different characteristics, it would be naïve to assume that dialyzability should be clinicians’ sole consideration in attempting to choose the appropriate beta blocker for an individual patient. However, they felt that the study’s findings should encourage more thorough investigations on the role of beta blocker dialyzability. “We firmly believe sufficient impetus is now present within the academic community for creation of a well-designed randomized controlled trial to compare specific beta blockers and their effects on all-cause mortality among dialysis patients, with sudden cardiac death as a prespecified adjudicated end point,” they wrote.

Study co-authors include Stephanie Dixon, PhD, Jamie Fleet, BSc, Matthew Roberts, MD, PhD, Daniel Hackam, MD, PhD, Matthew Oliver, MD, MHS, Rita Suri, MD, MSc, Robert Quinn, MD, PhD, Sundus Ozair, MD, Michael Beyea, PhD, Abhijat Kitchlu, and Amit Garg, MD, PhD.

Disclosures: The authors reported no financial disclosures.

The article, entitled “Beta blocker dialyzability and mortality in older patients receiving hemodialysis,” will appear online at http://jasn.asnjournals.org/ on October 30, 2014.

The editorial, entitled “Beta-Blockers in Dialysis Patients: A Nephrocardiology Perspective,” will appear online at http://jasn.asnjournals.org/ on October 30, 2014.

Founded in 1966, and with more than 15,000 members, the American Society of Nephrology (ASN) leads the fight against kidney disease by educating health professionals, sharing new knowledge, advancing research, and advocating the highest quality care for patients.

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Tweet: Removal of heart drugs by dialysis may increase kidney failure patients' risk of premature death. http://www.bit.ly/ASN-XXXX

Facebook: A simple and inexpensive urine test routinely done in family doctors' offices can identify people who are silently undergoing rapid kidney function decline, says a study in the *Journal of the American Society of Nephrology*. The test could lead to earlier and more effective treatments, lowering risks of kidney failure and death. Some 60 million people globally have chronic kidney disease, but many don't know it, as they have no symptoms until later stages of disease.

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