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## **HOSPITAL ACQUIRED COMPLICATIONS MAY BE ESPECIALLY DANGEROUS FOR PATIENTS WITH KIDNEY DISEASE**

### **Highlights**

- Potentially preventable hospital acquired complications were associated with increased risks of dying while hospitalized or within 90 days of discharge, as well as with a greater likelihood of staying longer in the hospital and needing to be readmitted.
- The magnitude of these associations was larger in patients with chronic kidney disease than in those with normal kidney function.

**Washington, DC (April 27, 2017)** — Recently, researchers reported that patients with chronic kidney disease (CKD) are at an increased risk of experiencing complications when hospitalized. The team has now found that potentially preventable hospital acquired complications (HACs) are linked with an elevated risk of early death—more so in patients with CKD than in those with normal kidney function. The findings appear in an upcoming issue of the *Clinical Journal of the American Society of Nephrology* (CJASN).

Although studies have shown that the presence of CKD is linked with a greater risk of potentially preventable HACs, the consequences of these complications were not unclear. To investigate, a team led by Scott Klarenbach MD, MSc and Babak Bohlouli, PhD candidate (University of Alberta) examined information on all adults hospitalized from April 2003 to March 2008 in Alberta, Canada. Of 536,549 patients who were hospitalized, 8.5% had CKD, and 9.8% of patients with CKD had at least 1 potentially preventable HAC.

Among the major findings:

- In CKD patients with potentially preventable HACs, 17.7% of patients died while hospitalized and 6.8% died within 90 days after discharge.
- CKD patients with potentially preventable HACs were 4.7- and 1.1-times more likely to die while hospitalized or within 90 days of discharge, respectively, than those without HACs, after adjustments.
- Compared with patients without CKD or potentially preventable HACs, patients with CKD and no HACs, patients without CKD and with potentially preventable

HACs, and patients with CKD and potentially preventable HACs were 2.2, 5.3, and 9.6- times more likely to die while hospitalized, respectively.

- Length of hospital stay and readmission rates within 90 days of discharge were elevated in patients who experienced potentially preventable HACs.

“Patients with potentially preventable hospital acquired complications are at higher risk of adverse clinical outcomes—longer hospital stay, mortality in the hospital and after discharge, and readmission. The magnitude of this association is larger in patients with CKD compared with those without,” said Bohlouli. The findings indicate that better prevention efforts are needed to reduce HACs, especially in patients with CKD.

In an accompanying editorial, Eric Young, MD (VA Ann Arbor Healthcare System and University of Michigan Medical School) noted that the study should encourage more research into HACs in patients with kidney disease. “The study should prompt nephrologists who care for hospitalized patients to review their current practices,” he wrote. “It is possible that the study findings could prompt insurers to introduce specific programs designed to create incentives for hospitals and providers to adopt practices that reduce the risk of complications in patients with chronic kidney disease specifically,” he added.

Study co-authors include Terri Jackson, PhD, Marcello Tonelli, MD, SM, and Brenda Hemmelgarn, PhD.

Disclosures: The authors reported no financial disclosures.

The article, entitled “Adverse Outcomes Associated with Preventable Complications in Hospitalized Patients with Chronic Kidney Disease,” will appear online at <http://cjasn.asnjournals.org/> on April 27, 2017, doi: 10.2215/CJN.09410916.

The editorial, entitled “Avoiding Preventable Complications in Hospitalized Patients with Chronic Kidney Disease,” will appear online at <http://cjasn.asnjournals.org/> on April 27, 2017.

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