

# Patients with poor nutrition before bladder cancer operation have higher risk of complications

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Patients with bladder cancer are two times more likely to have complications after a radical cystectomy procedure if they have a biomarker for poor nutritional status before the operation, according to study findings presented last week at the 2013 Clinical Congress of the American College of Surgeons. Surgeons from the University of North Carolina at Chapel Hill School of Medicine and UNC Lineberger Comprehensive Cancer Center identified a potentially modifiable risk factor for such postsurgical problems: a low preoperative level of albumin, a marker of the protein level in the blood.

David C. Johnson, MD, MPH, lead author of the study and a senior urology resident at UNC School of Medicine, and colleagues evaluated the impact that patients' [nutritional status](#) before radical cystectomy had on the rate of complications within 30 days after the operation. Radical cystectomy is a procedure that involves surgical removal of the bladder and lymph nodes.

Researchers mined the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) database to analyze postoperative complications data from 1,085 patients who underwent radical cystectomy at 315 medical centers across the United States from 2005 to 2011. ACS NSQIP is the leading nationally validated, risk-adjusted, outcomes-based program to measure and improve the quality of care in private sector hospitals.

"Poor nutrition is a known risk factor for adverse results after radical cystectomy," Dr. Johnson explained. "The prevalence of nutritional deficiency is very high in patients with [bladder cancer](#), partly because of their disease and partly because of their advanced age—73 years on average."

Bladder cancer will be newly diagnosed in more than 72,500 people this year, the American Cancer Society estimates, and about one-third of all cases involve cancer that has spread into the muscular wall of the bladder, which permits spread to other organs. For these patients, radical cystectomy is the standard treatment, but the complication rate after the operation remains high, particularly for infections and poor wound healing, explained study authors.

"Nutrition is clearly an important issue among post-cystectomy bladder cancer patients, and our study highlights this on a large scale through use of the American College of Surgeons' NSQIP database. As UNC is a Bladder Cancer Center of Excellence, we are making strides to use this information to benefit our patients," said Angela Smith, MD, assistant professor of urology, UNC Lineberger member, and senior author and lead investigator on the study.

"We are currently implementing a nutritional protocol in which all cystectomy patients will receive a preoperative nutritional assessment by a certified clinical nutritionist to address and optimize nutritional deficiencies. Furthermore, a nutritionist will be involved in postoperative care, both on an inpatient and outpatient basis. We hope that proactive emphasis on nutrition will lead to improved outcomes in this vulnerable population."

Among study patients who experienced complications within the first month after the [surgical procedure](#), the authors looked for the presence of any of three known preoperative nutritional factors that could affect

surgical results. These factors were a low albumin level (less than 3 grams per deciliter, or g/dL), weight loss greater than 10 percent of body weight six months before the operation, and obesity, defined as a body mass index (BMI) of 30 kilograms per square meter or higher.

Study results showed that 575 patients (53 percent) experienced complications within the first month after the surgical procedure. Of these patients, 32 (6 percent) had a low preoperative albumin level, 28 (5 percent) had major weight loss within the six months before the operation, and 182 (32 percent) were obese at cystectomy.

The investigators found that only low albumin level was a significant predictor of experiencing a postoperative complication, after controlling in the statistical analysis for patient age, involvement of a trainee surgeon in the operation, the year the operation took place, and a history of a prior operation. Patients with low albumin levels before the surgical procedure had 2.1 times the risk of having a complication within 30 days after the operation compared with those whose albumin level was in a normal range or above (3 g/dL and higher), the authors reported.

It is unclear from this study whether preoperative correction of low albumin levels, such as from nutritional supplementation, will translate to fewer problems after radical cystectomy. However, based on their findings, Dr. Johnson still recommends that [patients](#) whose albumin levels are low before a scheduled radical cystectomy see a nutritionist to learn whether they need to make dietary changes before their operations.

Provided by University of North Carolina Health Care

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