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Comorbidity-Specific Outcomes Differences in Hip Periprosthetic Infection Treatment

Joseph Kavolus, MD, MSCR, Daniel Cunningham, BS, Michael P. Bolognesi, MD, Samuel Wellman, MD, Thorsten Seyler, MD, PhD

Introduction: As the prevalence of patient comorbidity and the demand for hip arthroplasty both increase, it will be important to understand the impact of common comorbidities on peri-prosthetic infection treatment outcomes. While it is known that common medical comorbidities influence risk of developing peri-prosthetic infection, their impact on outcomes in infection treatment is less understood.

Methods: We reviewed the records of 158 patients from our tertiary care center that underwent treatment for periprosthetic hip infection between 2005 and 2015 and had at least 1 year of follow-up at our institution. We collected patient characteristics such as age, gender, and race as well as medical comorbidities. We determined the total number of surgeries and days in hospital for infection and final outcome. Patients were defined as being cured if they had appropriate arthroplasty components in place without need for further surgery or antibiotics. Finally, we constructed multivariable models of our outcomes using covariates that first met a univariate significance threshold of 0.1. Covariates that had p-value less than 0.05 in multivariable outcome models are reported below.

Results: Cure rates for patients with anemia (83% vs 94%, p=0.040) and coronary artery disease (71% vs 90%, p=0.019) were lower than for patients without those diseases. The following risk factors were associated with increased surgery for infection (additional surgeries, p-value): anemia (0.54, 0.0049), chronic pulmonary disease (0.61, 0.0057), and younger age (0.02/year, 0.046). Increased cumulative length of stay in hospital was associated with the following factors (additional days, p-value): diabetes (6.3, 0.00020), psychiatric disease (5.6, 0.0023), anemia (3.9, 0.0088), and chronic pulmonary disease (4.2, 0.015).

Conclusions: This is one of the first studies to demonstrate that common patient comorbidities are associated with poor outcomes in hip peri-prosthetic infection. This comorbidity-specific information could become a part of individualizing patient-physician conversations surrounding expected infection treatment.

