



James A. Rand Award

## **Who Should Not Undergo Short Stay Hip and Knee Arthroplasty? Risk Factors Associated with Major Medical Complications following Primary Total Joint Arthroplasty**

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**Introduction:** Improvements in anesthesia, pain, and rehabilitation protocols have made short stay and outpatient total joint arthroplasty a possibility. Concerns exist, however, with regards to patient safety and the penalties associated with hospital readmission. The purpose of this study is to define the incidence and timing of perioperative medical complications following primary joint arthroplasty and identify the independent risk factors associated with these complications.

**Methods:** We retrospectively reviewed prospectively collected data on a consecutive series of 1012 patients undergoing primary THA/TKA over a 10-month period. Medical comorbidities, demographics, and postoperative in-hospital complications were recorded for each patient. We defined and classified complications according to the validated system published by Sink et al (CORR 2012). Additionally, a subgroup of patients who experienced a medical complication greater than 24 hours following surgery was identified. Univariate and multivariate logistic regression analysis was performed to identify independent risk factors and to generate a model to best determine the patient best suited for a short stay primary TJA.

**Results:** Of the 1012 unselected patients, 70 patients (6.9%) experienced a medical complication while 59 (84%) of these complications occurred after 24 hours postoperatively. Independent risk factors included COPD (adjusted OR 4.16, 95% CI 1.86 – 9.32), CHF (adjusted OR 9.71, 95% CI 4.55 – 20.71), CAD (adjusted OR 2.80, 95% CI 1.38 – 5.69), and cirrhosis (adjusted OR 8.43, 95% CI 1.63 – 43.59). A model based on these comorbidities with a 6 point score was developed to identify the ideal candidate for short stay TJA. Patients with a score of zero had a probability of complications after 24 hours postoperatively of 3.1%.

**Conclusion:** Most postoperative medical complications occurred past 24 hours after surgery. While medical economics is the principal driver for decreasing length of stay, patients with a history of COPD, CHF, CAD, and cirrhosis should not undergo short stay primary THA or TKA.

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