

Assessing Clinical Risk Factors for Early (30 Day) and Late (1 year) Re-admission following Immediate Breast Reconstruction

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Introduction: After passage of the Affordable Care Act, which includes the Hospital Readmissions Reduction Program, there has been an increasing focus on complications and readmission rates. Understanding peri-operative risk factors for complications may help reduce re-admissions and operative complications, resulting in an improvement in outcomes. Previous studies have investigated the NSQIP database regarding readmissions, but are limited to 30 days of follow-up. In this study we tracked all immediate breast reconstruction patients at our institution for readmissions during the first postoperative year.

Methods and Materials: After IRB approval, retrospective analysis of all Breast Reconstruction patients with a minimum of 1 year of follow-up from 2010-2012 was performed. Demographics, comorbidities, complications, and readmission rates for <30 days, 31-90 days, and 91 days to 1 year, and non-admission emergency room visits for the first postoperative year were evaluated. Statistical analysis was performed using a Generalized mixed linear effect model.

Results: The study population included 353 patients. Readmission rates were 9.52% for <30 days, 11.2% for 31-90 days, and 19.33% for 91 days to 1 year. 30 day readmission rates were correlated with surgical site infection (OR=11.67, $P<0.001$), seroma (OR=5.44, $P=0.0007$), preoperative bra size of D or greater (OR=3.47, $P=0.015$), and BMI greater than 30 (OR=2.23, $P=0.041$). 31-90 day readmission rates were significantly increased by surgical site infection (OR=5.48, $P=0.003$), implant infection (OR=7.48, $P<0.001$), BMI greater than 30 (OR=2.19, $P=0.024$), and preoperative bra size of D or greater (OR=2.87, $P=0.015$). Finally, 91 day to 1 year readmissions were linked to cancer stage 3 or 4 (OR=2.1, $P=0.013$), surgical site infection (OR=4.6, $P=0.008$), and implant infection (OR=63.36, $P=0.004$). Surgical site infection and preoperative bra size of D or greater were both shown to be significant risk factors for emergency room visits.

Conclusions: This study addresses one of the limitations of recent NSQIP readmissions studies, the short follow-up which fails to capture late wound healing/infectious complications or the effects of adjuvant breast cancer therapy. The independent risks factors identified in this study may help surgeons better risk stratify their patients and thus potentially improve clinical outcomes in immediate breast reconstruction.