Introduction:
Hospital administrators and third party payers desire a short hospital postoperative length of stay (LOS). Forrest et al. found that only age correlated with LOS after elective total hip and knee arthroplasty, but BMI and patients’ comorbidities were not found to correlate with LOS. Hypertension, diabetes and obesity were found to increase risk of complications after orthopedic arthroplasty, but BMI and patients’ comorbidities were not found to correlate with LOS.

Methods:
After obtaining IRB approval, we retrospectively reviewed the medical records of patients undergoing elective total hip or total knee replacement from January 2001 to April 2006. Detailed preoperative comorbidities were recorded. Data were analyzed using logistic regression and robust ANOVA. Data are reported as geometric mean and odds ratios with 95% confidence interval in parentheses. A p value of < 0.05 was considered statistically significant.

Results:
Data from 7282 patients were included in the study. The median LOS was 3 days (mean 3.46 days, range 1-58). Multivariate analysis showed that odds ratios for prolonged LOS were significantly increased by sex, 1.04 (1.03, 1.05; p < 0.001) male versus female; age, 1.01 (1.01, 1.01; p = 0.001) per decade of life; ASA status, 1.01 (1.00, 1.02; p = 0.003) ASA status 3+4 versus 1+2; duration of surgery, 1.14 (1.12, 1.15; p = 0.001) if > 137 min; bilateral surgery, 1.15 (1.14, 1.17; p = 0.001) versus unilateral; and revision surgery, 1.04 (1.03, 1.06; p = 0.001) versus primary. BMI did not affect LOS, 1.00 (1.00, 1.00; p = 0.51). History of h/o cardiac arrhythmia significantly increased odds ratios by 1.02 (1.01, 1.04; p = 0.024) and h/o coronary artery disease (CAD) by 1.01 (1.00, 1.02; p = 0.32). H/o cardiac valve disease, congestive heart failure, HTN, pulmonary disease, malignancy, diabetes, stroke, hematological disease, and dislipidemia did not significantly increased the odds ratios.

Discussions:
The influence of patient comorbidities on LOS after hip and knee surgery is sparse. Our data conform recognized risk factors: age, length of surgery, ASA status, revision surgery and bilateral surgery; but of multiple comorbidities only h/o CAD and cardiac arrhythmias independently prolonged hospital LOS. Recognizing the preoperative risk factors that prolong LOS after joint arthroplasty can enable physicians and administrators to better anticipate hospital bed utilization.

References:

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