Double disparity for low socioeconomic status patients in postoperative morbidity following total hip arthroplasty

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Background: Prior studies reveal a strong relationship between case volume and surgical outcomes across multiple disciplines, including cardiothoracic, gastrointestinal, orthopedic, and vascular surgery (1,2). It has also been shown that low socioeconomic status (SES), as measured by uninsured or Medicaid primary insurance status, racial minorities and low-income groups are more likely to obtain care at low volume hospitals (3). The present study aims to examine the association between race, income, primary payer status and hospital surgical volume and evaluate disparities in hospital readmission rates following total hip arthroplasty (THA).

Methods: We conducted a retrospective analysis using hospitalization and discharge records of patients >18 years of age from the State Inpatient Databases (SID) of New York, Florida, and California, Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality. Records from the SID were retrospectively identified from January 2007 to December 2011 for patients who underwent THA. The unadjusted rate and adjusted odds ratios of readmission were evaluated by bivariate analysis and multivariate logistic regression analysis. Variables of interest included insurance payer, race, and median income by geographic location as well as hospital surgical volume.

Results: 274,851 patients met inclusion criteria in our analysis. Black, Native American, and Hispanic patients were more likely to be readmitted after both 30 and 90 days when compared to White patients following THA. Patients in the highest income quartile were least likely to be readmitted at both 30 and 90 days, and those in the poorest income quartile were at highest risk for hospital readmission at both time points (OR 30-days 0.89 (0.85-0.94 95% CI), OR 90-days 0.91 (0.87-0.94 95% CI); p<0.05). Similarly, Medicare and Medicaid patients were more likely to be readmitted at both 30 and 90 days as compared to patients with private insurance (p<0.05). Patients treated at high volume joint replacement centers experienced lower risk for both 30 and 90 day readmission when compared to patients treated at low volume centers for THA (OR 30-days 0.76 (0.72 - 0.80 95% CI), OR 90-days 0.82 (0.79 - 0.85 95% CI); p<0.05). Risk adjusted outcomes for age also showed the greatest risk for 30 and 90 day readmission in low volume centers, and analysis of elective THA revealed a lower readmission risk for higher volume centers as well.

Conclusions:
Our results demonstrate a double disparity in THA in these populous states. Patients with lower SES have higher rates of postoperative morbidity after THA. Furthermore, such patients are more
likely to be treated at a low volume surgical center, which is independently associated with worse outcomes (3). Given the increasing cost burden of healthcare delivery in the US, it is therefore important to consider SES (as measured by payer status, race, and income) in preoperative risk stratification models. Future studies may help to elucidate the causative factors that contribute to such disparities.

References

