Recent Patterns of Femoral Neck Fracture Management in the United States: An Analysis of National Inpatient Sample Data 2016 - 2020

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INTRODUCTION: Optimal treatment of femoral neck fractures (FNFs) remains controversial. Total hip arthroplasty (THA) may result in enhanced functional outcomes in younger, active patients. This study offers insight into current management patterns and outcomes across hospital settings.

METHODS: The National Inpatient Sample database was analyzed from 2016-2020 for the utilization of THA vs hemiarthroplasty (HA) amongst different age groups and hospital settings including rural, urban nonteaching and urban teaching. We identified patients with a diagnosis of FNF using ICD-10 codes. ICD-10 codes identified procedure type and inpatient complications. Regression models are adjusted for sex, race, insurance, income, hospital bed size, hospital region, and teaching status, and Elixhauser comorbidity index.

RESULTS: A total of 497,520 hospitalizations for FNFs were identified, with over 80% (n=408,435) having had a HA. A significant majority of patients were female, white and covered under Medicare (*P*<0.001). Utilization of THA in all age groups increased across all hospital settings over the period; with the 50 – 64 age group showing the most marked increase , from 42% to 51%. Urban teaching hospitals performed the majority of HA and THA (62% and 66% respectively) (*P*<0.001). Major complications over time significantly decreased for HA and THA in all hospital settings (*P*<0.001 for trend). No significant change in mortality over time was observed. THA was associated with higher odds of major complications across all hospital settings (aOR 1.24, 95% CI: 1.19-1.29) and higher odds of mortality at urban teaching hospitals (aOR 1.71, 95% CI: 1.31-2.24). At urban nonteaching hospitals, THA was associated with lower odd of minor complications (aOR 0.90, 95% CI: 0.83-0.97).

DISCUSSION AND CONCLUSION:

HA remains the preferred treatment for FNFs. Inpatient complications for both THA and HA after FNFs are decreasing. Utilization of THA is increasing in the younger population despite an associated higher complication rate. Optimal management for FNFs remains controversial.