Trends in Femoral Neck Fracture Management From 1998 to 2010

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Purpose: Recent clinical evidence supports total hip arthroplasty (THA) as compared to hemiarthroplasty (HA) for the management of displaced femoral neck fractures in elderly patients. The purpose of this study was to examine trends in femoral neck fracture management over the last 12 years.

Methods: Using data from the Nationwide Inpatient Sample (NIS) database, we identified patients treated for femoral neck fracture between 1998 and 2010 with either THA, HA, or internal fixation (IF). We examined trends in treatment over time as well as demographic variables such as patient age, gender, and socioeconomic status as well as payer and hospital characteristics.

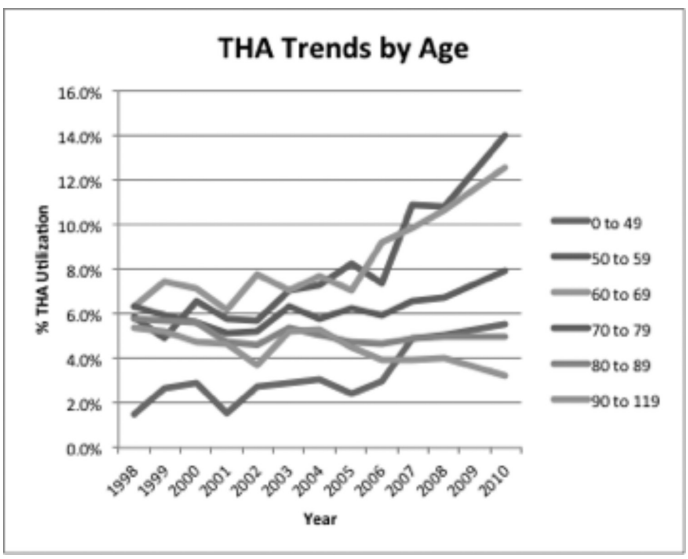
Results: We identified 334,929 femoral neck fracture patients treated with one of the three procedures between 1998 and 2010. Overall, there were statistically significant increases in the rates of THA and HA (THA: 5.8% to 6.7%; HA: 62.3% to 63.9%), while rates of IF decreased (32.0% to 29.4%). Utilization of THA varied based on patient age, with significant increases occurring in age groups 0-49 years (1.5% to 5.5%), 50-59 years (5.9% to 14.0%), 60-69 years (6.3% to 12.6%), and 70-79 years (6.3% to 7.9%). Conversely, patients in age groups 80-89 years (5.8% to 5.0%) and 90-119 years (5.4% to 3.2%) showed a decreasing trend for THA utilization. Utilization of THA also varied based on socioeconomic status and race. There was no increase in THA in patients of the lowest socioeconomic bracket (income $1-24,999), while rates of THA increased in all others. Utilization of THA decreased in Hispanics, did not change in blacks and Native Americans, and increased in Caucasian and Asian patients. Patient sex, urban versus rural hospital location, and teaching versus non-teaching hospital status were not related to rates of THA.

THA Trends by Age

Age Group	P-value
0 to 49	3.43E-10
50 to 59	2.20E-16
60 to 69	2.20E-16
70 to 79	3.54E-07
80 to 89	3.89E-05
90 to 119	1.09E-07

Overall Trends by Procedure

Procedure	P-value
THA	1.12E-09
HA	2.07E-11
IF	2.20E-16



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Conclusion: Rates of THA for the treatment of femoral neck fractures increased between 1998 and 2010 in patients younger than 80 years of age, suggesting that surgeons are responding to mounting clinical evidence that THA is superior in these circumstances. This is the first study to demonstrate a change in practice pattern in response to this clinical evidence in the United States. Further research is indicated to explore the effect of socioeconomic status and race on femoral neck fracture management.

See pages 99 - 147 for financial disclosure information.