

Cemented versus Uncemented Hemiarthroplasty following Intracapsular Hip Fractures: An Analysis of 210,405 Patients from a Large National Database

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INTRODUCTION: Intracapsular hip fractures are common injuries associated with significant morbidity and mortality that may require hemiarthroplasty. Presently, there is a lack of consensus regarding the use of cemented or uncemented implants in these cases. This study aims to compare outcomes between cemented and uncemented hemiarthroplasty for intracapsular hip fractures.

METHODS: This is a retrospective cohort study. Data was drawn from the National Readmissions Database, years 2016-2019. Using ICD-10 codes, patients with intracapsular hip fractures who underwent hemiarthroplasty, cemented or uncemented, were identified. Multivariate regression was performed to assess outcomes between the cemented and uncemented cohorts. Negative binomial regression was performed to assess discharge disposition and 30-day readmission or reoperation. Patient demographic variables and comorbidities, measured via the Elixhauser comorbidity index, were controlled for in our regression analysis.

RESULTS: A total of 210,405 patients, representing 103,635 (49.26%) cemented and 106,770 (50.74%) uncemented hemiarthroplasties, were included. Cemented hemiarthroplasty was associated with increased medical complications (Odds Ratio (OR) 1.043; $p < 0.001$), particularly cardiopulmonary ones - myocardial infarction (OR 1.148; $p = 0.002$), pulmonary embolism (OR 1.265; $p < 0.001$) - and surgical complications (OR 1.231; $p < 0.001$), particularly transfusion (OR 1.409; $p < 0.001$). However, cement was also associated with greatly reduced risk of periprosthetic fracture (OR 0.329; $p < 0.001$), dislocation (OR 0.79; $p < 0.001$), reoperation (OR 0.663; $p < 0.001$), and readmission (OR 0.937; $p = 0.001$).

DISCUSSION AND CONCLUSION:

Our results are somewhat equivocal. Cemented hemiarthroplasty is associated with increased risk of medical, particularly cardiopulmonary, and surgical complications, namely blood transfusions. However, cement was associated with a greatly reduced risk of periprosthetic fracture and dislocation, particularly severe complications. Further, cement was associated with reduced odds of reoperation or readmission. Orthopaedic surgeons should be aware of the respective benefits and risks of each technique, as individual patient factors and requirements should guide decision making.

