Influence of Medicare on Outcomes of Hip Replacement Surgery among American Women

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RCOG 2022 WORLD CONGRESS

HOWARD UNIVERSITY College of Medicine

INTRODUCTION

There are documented racial disparities in access and outcomes following Hip replacement surgery. These disparities are often driven by a complex web of socioeconomic factors, patient risk factors, comorbidities, hospital characteristics, quality, geography, and bias. A significant cause of these disparities is uneven access to quality health insurance. The aim of the present study is to determine if the race is an independent predictor of adverse outcomes among Medicare patients who underwent Hip replacement surgery in the United States.

METHOD

We collated data from the National Inpatient Sample (2005-2015) database on all hospitalizations on account of Hip replacement surgery. We compared Black women with Medicare insurance who had the procedure to a propensity score-matched control group of White women with Medicare insurance and controlled for age, indication for surgery (Osteoarthritis or Hip fracture), Charlson comorbidity index (CCI), region of the country, weekend admissions and elective procedures. The outcomes of interest were post-operative sepsis, acute pulmonary embolism (PE), acute myocardial infarction (MI), length of hospital stay (LOS), and mortality rate following the procedure

RESULTS

There were 400,359 hospitalizations for total/partial hip replacement surgery in the NIS from January 2005 to September 2015. The mean age was 77.91±7.9 years. The majority of the study population were Whites, 89.27%, only 4.24% were Black, and 3.21% were Hispanics. The mortality rate was 0.92%. The mean LOS was 4.64± 3.43 days. Among these, there were 266,190 Black and White American women on Medicare who were admitted for total/partial hip replacement surgery. We matched 11,553 Black patients with 46,212 White control. Black women had a higher incidence of postoperative sepsis (1.00% versus 0.63%, $p < 0.05$), and a longer hospital stay (5.07 ± 4.43 vs 4.95 ±3.69, $p < 0.05$). There was no difference in the mortality rates between the two groups (0.84 vs 1.00, p=0.12)

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Outcomes of Hip Replacement Surgery among White and Black Americans (NIS 2005-2015)

Variables	Black (n=11,533)	White (n=46,212)	p-value
Sepsis	1.00	0.63	<0.001*
Surgical Site Infection	0.31	0.41	0.092
Acute Pulmonary Embolism	0.32	0.20	0.010*
Acute Myocardial Infarction	0.98	1.30	0.003*
Length of Hospitalization	5.07	4.95	<0.001*
In-Hospital Mortality	0.84	1.00	0.12

† Model adjusted for age, Insurance, income, pre-existing comorbidities, region of the country and indications for surgery. *p < 0.05

CONCLUSIONS

Uneven access to insurance is a significant reason for the disparities in outcome following Hip replacement surgery in the United States. Universal and affordable health insurance will improve health outcomes. However, Black women continue to have a higher risk of postoperative sepsis and longer hospital stay despite access to Medicare.

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