Hospital readmissions and resource utilization after isolated CABG remains increased for Black and Hispanic patients after controlling for insurance type

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Background:
Coronary artery bypass grafting (CABG) is performed nearly 400,000 times annually in the United States for the management of coronary heart disease [1]. Prior studies have found Medicaid and no insurance status, low socioeconomic status (SES), and Black and Hispanic race to be associated with negative post-operative outcomes after CABG. We examined the associations between race with readmissions and resource utilization (length of stay and total hospitalization charges) after CABG with statistical stratification and homogenization by insurance type to isolate the impact of race.

Methods:
A retrospective review was performed using the State Inpatient Databases of California, Florida, and New York; Healthcare Cost and Utilization Project; Agency for Healthcare Research and Quality [2] for all isolated CABG patients >18 years of age between the years of 2007 to 2011. Multivariate regression analyses for length of stay, total charges, and 30-day & 90-day readmission rates were calculated to obtain odds ratios for outcomes by race and SES as measured by median income. These models were re-run with statistical stratification of models and resultant subgroup analysis by insurance type (Medicaid, Medicare, Private, Other, Uninsured).

Results:
A total of 194,912 patients were included in our analysis. As shown in Table 1, after adjustment for the concurrent effects of patient, hospital, and operative factors, Black patients had increased 30-day and 90-day readmissions (OR 1.28 and 1.28, respectively), increased LOS, and increased total charges when compared to White patients. Similarly, Hispanic patients had increased adjusted odds of any complications (OR 1.05), 30-day (OR 1.18) and 90-day (OR 1.19) readmissions, LOS, and total charges. When compared to the poorest quartile of median income level, the richest quartile showed decreased adjusted odds of mortality (OR 0.70), 30-day and 90-day readmissions (OR 0.96 and 0.95, respectively). It did, however, show increased odds of complications (OR 1.12) and total charges (OR 1.15). When stratifying by primary payer type (Table 2), the associations between Black race and increased 30- and 90-day readmissions remained significant across most insurance types except among those who were uninsured; increased LOS and total charges remained significant across insurance groups. Similar associations were observed in the Hispanic population.
Conclusions:

Our study demonstrates that Black or Hispanic race is associated with worse outcomes after CABG as demonstrated by increased readmissions, increased length of stay, and increased charges as compared to White patients. Additionally, our results remained statistically significant after model stratification and homogenization by insurance type indicating that the role of race in health care inequality is complex and cannot be explained by disparities in insurance payer type alone. It has been suggested that the elimination of racial inequalities across healthcare in the United States has the potential for significant cost savings [3]. With US national healthcare spending reaching 17.8 percent of GDP at $3.2 trillion in 2015 [4], control of healthcare expenditures due to racial inequalities has many implications and further investigation into its causes could lead to potential solutions.

References:


