

Introduction

Previous studies have demonstrated a role of race and socioeconomic status (SES) as predictors of treatment and outcomes in several neurosurgical disorders. The effect of socioeconomic determinants on outcomes in cranial meningiomas however, has not been studied.

Methods

We utilized outcomes data from the Surveillance, Epidemiology, and End Results (SEER) program database at the National Cancer Institute to identify 54,282 patients undergoing treatment for meningioma between 2003 and 2012. SES was measured by a composite index developed by Yost et al. Race was categorized as Caucasian and non-Caucasian. Treatment received included surgery, radiation, and radiation with surgery. Odds of receiving surgery and survival probability were analyzed using multivariate logistic regression and Cox proportional hazards model, respectively.

Results

73% of the study population was female. Mean age at diagnosis was 64 years and 15% of patients received gross total resection, 26% achieved 'other surgery,' while 58% received no surgery. High SES tertile (OR = 1.112; 95% CI 1.103-1.220; p = 0.03) and high SES quintile (OR = 1.067; 95% CI 1.011-1.125; p = 0.02) were both predictors of gross total resection after being adjusted for age at diagnosis, sex, race and tumor grade (World Health Organization System). Higher SES did not correlate with any survival difference (p=0.22 after being adjusted for age at diagnosis, sex, race and tumor grade). Neither race nor gender affected likelihood to receive a particular treatment modality (surgery and/or radiation).

Conclusions

This study suggests socioeconomic status is an independent predictor of receiving gross total resection for meningiomas, after being adjusted for multiple covariates including age, sex, race, and tumor grade. Further investigation is required to understand possible reasons for this association, and how disparities in health services and outcomes can be addressed across the population.

Learning Objectives

Describe the different methods of stratifying patients based on socioeconomic status.

Discuss the role of socioeconomic status on gross total resection in meningioma patients.