Racial disparity

Disparities in treatment and outcomes disproportionately affect minority ethnic and racial populations in many surgical fields. Although substantial research on racial disparities has focused on outcomes, little is known about how surgeon recommendations can be influenced by patient race. The aim of the study was to investigate racial and socioeconomic disparity in the surgical management of primary brain tumors.

In this registry-based cohort study, we used data from the Surveillance, Epidemiology, and End Results (SEER) database (1975-2016) and the American College of Surgeons National Cancer Database (NCDB) in the USA for an independent analysis. Adults (aged ≥20 years) with a new diagnosis of meningioma, glioblastoma, pituitary neuroendocrine tumor, vestibular schwannoma, astrocytoma, and oligodendroglioma, with information on tumor size and surgical recommendation, were included in the analysis. The primary outcome of this study was the odds of a surgeon recommending surgical resection at diagnosis of primary brain neoplasms. This outcome was determined using multivariable logistic regression with clinical, demographic, and socioeconomic factors.

This study included US national data from the SEER (1975-2016) and NCDB (2004-17) databases of adults with a new diagnosis of meningioma (SEER n=63 674; NCDB n=222 673), glioblastoma (n=35 258; n=104 047), pituitary neuroendocrine tumor (n=27 506; n=87 772), vestibular schwannoma (n=11 525; n=30 745), astrocytoma (n=5402; n=10 631), and oligodendroglioma (n=3977; n=9187). Independent of clinical and demographic factors, including insurance status and rural-urban continuum code, Black patients had significantly higher odds of recommendation against surgical resection of meningioma (adjusted odds ratio 1·13, 95% CI 1·06-1·21, p<0·0001), glioblastoma (1·14, 1·01-1·28, p=0·038), pituitary neuroendocrine tumor (1·13, 1·05-1·22, p<0·0001), and vestibular schwannoma (1·48, 1·19-1·84, p<0·0001) when compared with White patients in the SEER dataset. Additionally, patients of unknown race had significantly higher odds of recommendation against surgical resection for pituitary neuroendocrine tumor (1·80, 1·41-2·30, p<0·0001) and vestibular schwannoma (1·49, 1·10-2·04, p=0·011). Performing a validation analysis using the NCDB dataset confirmed these significant results for Black patients with meningioma (1·18, 1·14-1·22, p<0·0001), glioblastoma (1·19, 1·12-1·28, p<0·0001), pituitary neuroendocrine tumor (1·21, 1·16-1·25, p<0·0001), and vestibular schwannoma (1·19, 1·04-1·35, p=0·0085), and indicated and indicated that the findings are independent of patient comorbidities. When further restricted to the most recent decade in SEER, these inequities held true for Black patients, except those with glioblastoma (meningioma [1·18, 1·08-1·28, p<0·0001], pituitary neuroendocrine tumor [1·20, 1·09-1·31, p<0·0001], and vestibular schwannoma [1·54, 1·16-2·04, p=0·0031]).

Interpretation: Racial disparities in surgery recommendations in the USA exist for patients with primary brain tumors, independent of potential confounders including clinical, demographic, and select socioeconomic factors. Further studies are needed to understand the drivers of this bias and enhance equality in surgical care [1].

1)

Butterfield JT, Golzarian S, Johnson R, Fellows E, Dhawan S, Chen CC, Marcotte EL, Venteicher AS. Racial disparities in recommendations for surgical resection of primary brain tumours: a registry-based cohort analysis. Lancet. 2022 Dec 10;400(10368):2063-2073. doi: 10.1016/S0140-6736(22)00839-X. PMID: 36502844.