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Healthcare spending versus mortality in central nervous system cancer: Has anything changed?

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Abstract

Background: The financial implications of central nervous system (CNS) cancers are substantial, not only for the healthcare service and payers, but also for the patients who bear the brunt of direct, indirect, and intangible costs. This study sought to investigate the impact of healthcare spending on CNS cancer survival using recent US data.

Methods: This study used public data from the Disease Expenditure Project 2016 and the Global Burden of Disease Study 2019. The primary outcome was the annual healthcare spending trend from 1996 and 2016 on CNS tumors adjusted for disease prevalence, alongside morbidity and mortality. Secondary outcomes included drivers of change in healthcare expenditures for CNS cancers. Subgroup analysis was performed stratified by age group, expenditure type, and care type provided.

Results: There was a significant increase in total healthcare spending on CNS cancers from $2.72 billion (95% CI: $2.47B to $2.97B) in 1996 to $6.85 billion (95% CI: $5.98B to $7.57B) in 2016. Despite the spending increase, the mortality rate per 100 000 people increased, with 5.30 ± 0.47 in 1996 and 7.02 ± 0.47 in 2016, with an average of 5.78 ± 0.47 deaths per 100 000 over the period. The subgroups with the highest expenditure included patients aged 45 to 64, those with private insurance, and those receiving inpatient care.

Conclusions: This study highlights a significant rise in healthcare costs for CNS cancers without corresponding improvements in mortality rate, indicating a mismatch of healthcare spending, contemporary advances, and patient outcomes as it relates to mortality.

Keywords: CNS malignancies; USA; brain cancer; cost analysis; health expenditures.