Abstract 560396

Insurance-Based Disparities in Patterns of Care for Brain Metastases

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Background

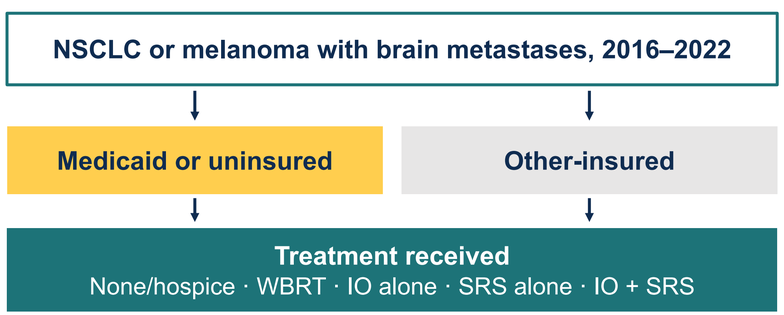
- Immunotherapy (IO) and stereotactic radiosurgery (SRS) have improved outcomes for brain metastases (BM) from NSCLC and melanoma.
- Both cost more and are more resource-intensive than whole-brain radiation (WBRT), which remains in use.
- Whether patients receive them may therefore depend on non-clinical factors.

Medicaid and uninsured patients with brain metastases were 34% more likely to receive no treatment or hospice, and when treated, less likely to receive SRS or immunotherapy.

These insurance-based patterns of treatment identify a discrepancy in care and may represent an actionable target for improving access to modern BM therapy.

Methods

- National Cancer Database, 2016–2022 (~70% of U.S. cancer cases)
- Adults with brain metastases from NSCLC or melanoma
- Logistic regression: no treatment/hospice vs any treatment
- Multinomial regression: each modality vs no treatment/hospice
- Adjusted for age, sex, race/ethnicity, insurance status, rurality, income, education, Charlson comorbidity



Results

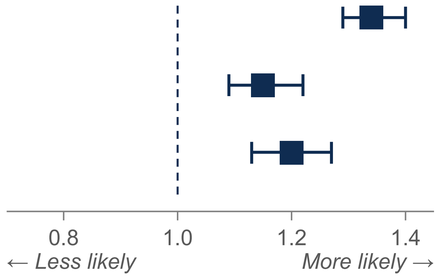
A. Odds of no treatment or hospice

Adjusted OR (95% CI), compared with reference group
Reference groups: other insured, highest-income area, highest-education area

Medicaid or uninsured
OR 1.34 (1.29–1.40), p < 0.001

Lowest-income area
OR 1.15 (1.09–1.22), p < 0.001

Lowest-education area
OR 1.20 (1.13–1.27), p < 0.001



B. Treatment received vs no treatment by insurance status

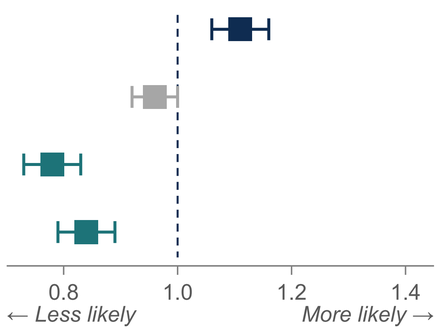
Unadjusted multinomial logistic regression OR (95% CI), Medicaid/uninsured vs other insured

WBRT / traditional RT
OR 1.11 (1.06–1.16), p < 0.001

IO alone
OR 0.96 (0.92–1.00), p = 0.07

SRS alone
OR 0.78 (0.73–0.83), p < 0.001

IO + SRS
OR 0.84 (0.79–0.89), p < 0.001



Future Directions for Research

- Extend the analysis to other cancers with brain metastases and stratify by diagnoses
- Test whether combination-therapy disparities exceed what either modality predicts alone
- Test whether this combination-access gap mediates known survival disparities in brain metastases
- Validate findings in an independent dataset (e.g., SEER-Medicare) to address NCDB's coverage limits

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