RESEARCH ARTICLE

CNS Oncology

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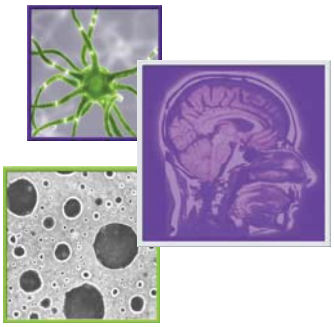
# Does Graded Prognostic Assessment outperform Recursive Partitioning Analysis in patients with moderate prognosis brain metastases?



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**Practice points**

- Optimal treatment for moderate prognosis patients (Recursive Partitioning Analysis [RPA] II or Graded Prognostic Assessment [GPA] 1.5–2.5) can be unclear.
- Treatment options for brain metastases include surgery, stereotactic radiosurgery, whole brain radiotherapy (WBRT), supportive measures or combinations of these modalities.
- Better prognosis patients are often prescribed longer schedules of whole brain radiation.
- On multivariable analysis among RPA II patients, receiving >10 WBRT fractions or undergoing surgery/stereotactic radiosurgery were significantly associated with increased survival.
- Among patients with GPA 1.5–2.5, better Karnofsky Performance Status or undergoing surgery/stereotactic radiosurgery were significantly associated with increased survival.
- The RPA II and GPA 1.5–2.5 have similar predicted median survivals (4.2 and 3.8 months), and in our patient group those scored by the RPA and assigned a longer radiation schedule had a survival advantage, while patients scored by the GPA did not.
- This could indicate the GPA is more clinically useful, leaving less room for subjective assessment in choosing treatment.
- There are many recently published articles concerning prognostic indices for brain metastases which are succinctly summarized in Tables 5 and 6 of this publication.

**Aim:** To compare the clinical utility of the Recursive Partitioning Analysis (RPA) and Graded Prognostic Assessment (GPA) in predicting outcomes for moderate prognosis patients with brain metastases. **Methods & materials:** We reviewed 101 whole brain radiotherapy cases. RPA and GPA were calculated. Overall survival was compared. **Results:** Sixty-eight patients had moderate prognosis. RPA patient characteristics for increased death hazard were ≤10 WBRT fractions or no surgery/radiosurgery. GPA patients had increased death risk with no surgery/radiosurgery or lower Karnofsky Performance Status. **Conclusion:** The indices have similar predicted survival. Patients scored by RPA with longer radiation schedules had longer survival; patients scored by GPA did not. This indicates GPA is more clinically useful, leaving less room for subjective treatment choices.

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