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The Value of 99mTc-Tetrofosmin Brain SPECT in Predicting Survival in Patients with Glioblastoma Multiforme.

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Abstract

(99m)Tc-tetrofosmin brain SPECT has been reported as a useful tool for the evaluation of glioma proliferation. In the present study, we set out to investigate the prognostic value of (99m)Tc-tetrofosmin brain SPECT in patients with glioblastoma multiforme.

METHODS: We prospectively studied 18 patients (13 men, 5 women; mean age \pm SD, 60.8 \pm 7.79 y) who were operated on for glioblastoma multiforme. All patients underwent preoperative (99m)Tc-tetrofosmin brain SPECT, and surgical excision was performed within a week after SPECT. All patients received postoperative radiotherapy and chemotherapy.

RESULTS: By calculating the lesion-to-normal (L/N) (99m)Tc-tetrofosmin uptake ratio, we found that patients with an L/N ratio of more than 4.7 had significantly worse survival than did patients with an L/N ratio of 4.7 or less. Furthermore, patients with a Karnofsky Performance Score more than 90 had a significantly better survival rate. Although patients with near-total tumor resection who were younger than 60 y survived longer, the difference did not reach statistical significance. In the multivariate analysis, (99m)Tc-tetrofosmin uptake and Karnofsky Performance Score were identified as factors with independent prognostic power.

CONCLUSION: (99m)Tc-tetrofosmin brain SPECT may be an independent prognostic factor in patients with glioblastoma multiforme. Further larger studies are needed to verify these results.

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