

Radiation therapy of pathologically confirmed newly diagnosed glioblastoma in adults

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Recommendations

Level 1

Radiation therapy is recommended for the treatment of newly diagnosed malignant glioma in adults. Treatment schemes should include dosage of up to 60 Gy given in 2 Gy daily fractions that includes the enhancing area.

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Hypo-fractionated radiation schemes may be used for patients with a poor prognosis and limited survival without compromising response.

Hyper-fractionation and accelerated fractionation have not been shown to be superior to conventional fractionation and are not recommended.

Brachytherapy or stereotactic radiosurgery as a boost to external beam radiotherapy have not been shown to be beneficial and are not recommended in the routine management of newly diagnosed malignant glioma.

Level 2

It is recommended that radiation therapy planning include a 1–2 cm margin around the radiographically defined T1 contrast-enhancing tumor volume or the T2 weighted abnormality on MR imaging.

Rationale

Although radiation therapy has been a standard therapy for the treatment of malignant glioma for more than 25 years there remains controversy as to the optimal way to deliver this therapy. Because of several randomized trials in the late 1970s and early 1980s that showed a benefit with radiation treatment along with retrospective series showing that there was a high rate of local recurrence; the stage was set for dose escalation to be studied. Dose escalation in conventional, hyper-fractionated, accelerated and hypo-fractionated radiotherapy was evaluated. Increased local dose was also evaluated including stereotactic radiosurgery and brachytherapy. Generally survival has been used as the endpoint for clinical trials, but increasing interest in quality of life issues has yielded additional information particularly in the older patients and poor prognostic groups.