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## Linear accelerator-based stereotactic radiosurgery in recurrent glioblastoma: a single center experience.

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### Abstract

**BACKGROUND/AIM:** Management of patients with recurrent glioblastoma (GB) comprises a therapeutic challenge in neurooncology owing to the aggressive nature of the disease with poor local control despite a combined modality treatment. The majority of cases recur within the high-dose radiotherapy field limiting the use of conventional techniques for re-irradiation due to potential toxicity. Stereotactic radiosurgery (SRS) offers a viable noninvasive therapeutic option in palliative treatment of recurrent GB as a sophisticated modality with improved setup accuracy allowing the administration of high-dose, precise radiotherapy. The aim of the study was to, we report our experience with single-dose linear accelerator (LINAC) based SRS in the management of patients with recurrent GB.

**METHODS:** Between 1998 and 2010 a total of 19 patients with recurrent GB were treated using single-dose LINAC-based SRS. The median age was 47 (23-65) years at primary diagnosis. Karnofsky Performance Score was  $\geq 70$  for all the patients. The median planning target volume (PTV) was 13 (7-19) cc. The median marginal dose was 16 (10-19) Gy prescribed to the 80%-95% isodose line encompassing the planning target volume. The median follow-up time was 13 (2-59) months.

**RESULTS:** The median survival was 21 months and 9.3 months from the initial GB diagnosis and from SRS, respectively. The median progression-free survival from SRS was 5.7 months. All the patients tolerated radiosurgical treatment well without any Common Toxicity Criteria (CTC) grade  $> 2$  acute side effects.

**CONCLUSION:** Single-dose LINAC-based SRS is a safe and well-tolerated palliative therapeutic option in the management of patients with recurrent GB.

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