

Local Control (LC) and Overall Survival (OS) with Concomitant Temozolomide (TM) and High Dose “Shrinking Fields” Radiotherapy (SFHDRT) as Post Operative (PO) Treatment in Patients (pts) with Incomplete Resection (IR) of Glioblastoma (GBM)

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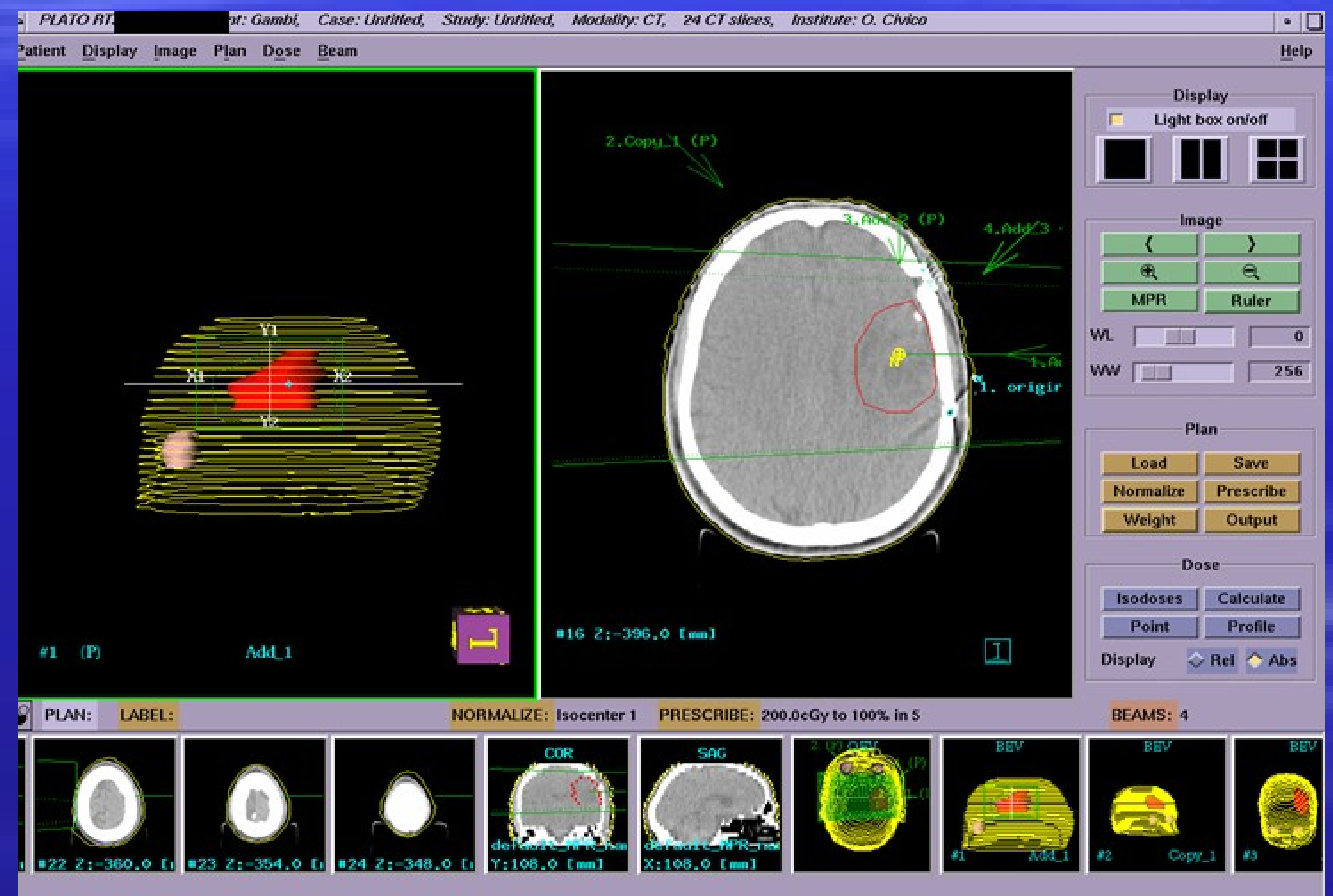
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PURPOSE:

LC and OS remain unsolved aspects of clinical history of GBM when treated with PO conventional radiotherapy doses. The study was aimed to evaluate local control and overall survival in pts incompletely resected for GBM, using concomitant TM and SFHDRT as adjuvant PO treatment.

METHODS:

A series of 76 consecutive pts (50 male 26 female) with histological diagnosis of GBM, who underwent IR, entered a pilot study and were treated with concomitant TM and HDRT at our institution. Pts accrual started July 2003 and lasted up to July 2006. The pts median age was 52 years; all pts had a Karnofsky performance score no lower than 60. IR and the extent of the residual tumour burden after surgical removal were evaluated by MRI and 18FDG PET. The schedule of treatment was as follows: TM was administered orally at 75 mg/m²/die for all the length of the radiotherapy. SFHDRT, highly 3D conformal, was given in three phases: 46 Gy were given to a volume encompassing the MRI enhancement plus 4 cm margin, followed by 10 Gy to a volume as above but with only 3 cm margin; a boost of 10 Gy, for a total dose of 66 Gy, was then given to the previous volume with a margin of only 2 cm. Steroids and osmotic diuretics were used to prevent intracranial hypertension. Treatment response was evaluated according to MRI and PET scan, taken every three months for the first year and every 6 months, or if clinical symptoms occurred, thereafter. The response was considered complete if MRI and/or 18FDG-PET were negative, partial if MRI parameters and 18FDG-PET SUV were cut more than 50%, stable or no response when they remain unchanged. MRI aspects of post treatment necrosis were considered no tumour related if PET scan was negative.



RESULTS :

A complete response was documented in 11 patients; 30 pts experienced partial response while stable disease was obtained in 35 pts. MRI aspects of radionecrosis were observed in 37 pts. Nine pts developed local relapse within one year from the end of RT, and underwent as salvage treatment with a BED10 24 Gy dose given through a hypofractionated dynamic arc IMRT. Transient thrombocytopenia was observed in all patient as TM related acute toxicity. Neurological SFHDRT related toxicity was evaluated according to mini mental test. No significant alterations were seen, except in relapsed pts undergoing the salvage treatment. At median of follow-up of 26 months (range 6-36 months) the median survival was 22 months.

RESPONSE TO TREATMENT	N PTS (%)
Complete response	11 pts(14. 45%)
Partial response	30 pts(39. 50%)
Stable disease	35 pts(46%)

CONCLUSIONS:

Data obtained in the study support the conclusion that concomitant continuous daily TM and concomitant, SFHDRT, can be considered safe, well tolerated. It seems to improve LC and OS when compared with historical series of standard 60 Gy RT with concomitant TM.