Introduction. Glioblastoma multiforme (GBM) is the most common primary brain tumor in adults, is an aggressive malignancy with a poor outcome. Current standard of care for newly diagnosed GBM includes trimodality treatment (Surgery, concomitant Radiotherapy and Chemotherapy).

Objective. The aim of this study was to investigate if the demonstrated improved survival in the literature is translated to clinical practice.

Materials and methods. This is a retrospective study between June 1996 and February 2013 that includes 163 patients with GBM. Median age 62 years (24–87); 102 male (62.6%) and 61 female (37.4%); 63 patients (38.6%) received 2DCRT and 100 (61.4%) were treated with 3DCRT. Performance status (PS-ECOG) 0 = 39.9%; 1 = 33.7%; 2 = 13.7%; 3 = 13.7%; 78 patients (47.9%) had complete tumor resection, 59 (47.6%) incomplete resection and 18 (11%) received only biopsy; 147 patients (93%) received chemotherapy, BCNU in 26 patients, Temozolamide (TMZ) concomitant in 12, TMZ concomitant and adjuvant 109. The Temporal lobe (41.4%), right hemisphere (52.5%), unilobar localization (66.9%) were the most common sites affected. For survival analysis patients were stratified by age, ECOG, and treatment modalities.

Results. The mean overall survival (mOSV) was 19.7 months (95% CI: 16.4–23.0); and mean progression-free survival (mPFSV) was 13.3 months (95% CI: 9.8–16.7) for the whole group. At 1 year mOSV was 54%, 2 years 25%, 3 years 13%, 4 years 10% and 6% at 5 years. The mPFSV at 1 year was 32%, 2 years 11%, 3 years 8%, 4 years 3% and 1% at 5 years. Factors identified as predictors of better overall survival (OS) were: extent of resection (p = 0.000 Log Rank); ECOG 0 vs. 1–3 (p = 0.031 Long Rank) and type of chemotherapy TMZ vs. BCNU (p = 0.006 Log Rank). On the other hand: 3DCRT vs. 2DCRT (p = 0.644 Long Rank), Sex (p = 0.79 Long Rank), and age of diagnosis (p = 0.351 Long Rank), were not factors predictors of OS in our retrospective study.

Conclusions. Complete resections, TMZ associated with 3DCRT, ECOG 0 younger patients significantly improve survival.

http://dx.doi.org/10.1016/j.rpor.2013.03.131

Glioblastoma multiforme: IMRT versus 3DCRT reirradiation in two patients
J. Morales Marco, P. Soler Catalán, F. Andreu Martínez, R. Tortosa Oliver, N. Chinillach Ferrando
Hospital Imed Elche, Oncología Radioterápica, Spain
Hospital Imed Elche, Unidad de Radiofísica, Spain

Introduction. The reirradiation of a local relapse remains nowadays a challenge for the tumor control of patients diagnosed with Glioblastoma Multiforme (GBM). It is not unusual that patients receive QT-RT after a surgical resection, with the underlying effects, what makes even more difficult to design the proper treatment for the patient, due to the previous treatments.

Objectives. To compare the different PTV coberture in the different planning techniques in two different patients: one treated with 3DCRT versus another patient treated with IMRT.

Methods. Two patients diagnosed with a relapse of GBM, underwent Radiotherapy after a surgical resection of the tumor failure, previously treated with QT-RT (Temozolamide plus 60 Gy with 3DCRT) after surgical resection. Patient A: 24 year-old patient received a total dose treatment of 37.5 Gy, delivered in 15 sessions of 2.5 Gy per fraction with 3DCRT. Patient B: 41 year-old patient received a total dose treatment of 36 Gy, delivered in 20 sessions of 1.8 Gy per fraction with IMRT.


Conclusions. We conclude that, although the planning comparison is between two different patients, the IMRT achieved a better PTV coberture than 3DCRT with a good sparing of the OARs and eloquent areas.

http://dx.doi.org/10.1016/j.rpor.2013.03.132

Glioblastoma Multiforme: Reirradiation planning techniques comparison in the same patient
P. Soler Catalán, J. Morales Marco, F. Andreu Martínez, R. Tortosa Oliver, N. Chinillach Ferrando
Hospital Imed Elche, Oncología Radioterápica, Spain
Hospital Imed Elche, Unidad de Radiofísica, Spain

Introduction. Nowadays, patients diagnosed with Glioblastoma Multiforme (GBM) can be treated with different radiotherapy techniques depending on the available technology of each radiation oncology department.

Objectives. To analyse the best treatment option with radiotherapy on a patient with several tumor control failures, previously treated with surgery, surgery plus QT-RT and a new scheme of surgery plus QT-RT.

Methods. A 41-year-old patient diagnosed with GBM in 2003, who was operated with R0 without adjuvant treatment. Five years later, the patient underwent a second surgery for a local relapse. Adjuvant treatment with QT-RT was delivered (Temozolamide...
plus 60 Gy with 3DCRT). In 2012, a new relapse was operated on subtotal surgery to avoid sensitive aphasia (as seen on post-surgery MRI). We compared a total dose treatment of 36 Gy, delivered in 20 sessions of 1.8 Gy per fraction with 3DCRT, IMRT and RapidArc®.


Conclusions. We conclude that the three techniques analysed can achieve good coverages of PTV, sparing the different OARs and eloquent areas.

http://dx.doi.org/10.1016/j.rpor.2013.03.133

Malignant tumors of the central nervous system (CNS). Our experience

N. Gascón 1, V. Rodríguez 1, S. Guardado 1, S. Gómez 1, C. Lechuga 1, M. Martín 1, M. Casado 1, Ó. Hernández 1, V. Fernández 2, J. Pérez-regadera 1

1 Hospital Universitario 12 de Octubre, Oncología Radioterápica, Spain
2 Hospital Universitario 12 de Octubre, Radiofísica, Spain

Introduction. The high degree glial tumors account for 2% of neoplasms in accident. They are aggressive tumors that require multidisciplinary approach with surgery, radiotherapy and chemotherapy.

Objective. Analyzed, in a retrospective series of malignant glial tumors, treatments performed, results and acute and chronic morbidity resulting therefrom.

Material and methods. Between February 2008 and February 2012 we evaluated 109 patients with primary CNS malignancies (45% male and 46% female) with a median age of 61 years. Glioblastoma Multiforme were 82%, 11% Anaplastic Astrocytoma, 3% Anaplastic Oligoastrocytoma, 4% Anaplastic oligodendroglioma and 6% histological confirmation could not be obtained so it was based on imaging test. 94% of patients were operated: 28% by total resection, 47% by partial resection and 19% exclusive biopsy.

Anaplastic Oligoastrocytoma, 4% Anaplastic oligodendroglioma and 6% histological confirmation could not be obtained so it was based on imaging test. 94% of patients were operated: 28% by total resection, 47% by partial resection and 19% exclusive biopsy.

Results. Median follow-up was 252 days. Toxicity assessed by CTCAE v4.0: of the 97 patients who received adjuvant treatment with QT, 19% had thrombocytopenia ≥ grade II and 24% ≥ grade II leukopenia. 97% of them showed no memory impairment and 94% had no cognitive impairment. The surgical site failure occurred in 88% of patients, the remote failure occurred in 9% of patients and 3% in both.

Conclusions. The high-grade glial tumors are tumors of poor prognosis with short survival being achieved discreetly extend thanks to the combination of treatments.

http://dx.doi.org/10.1016/j.rpor.2013.03.134

Management of patients with glioblastoma multiforme. A single institution experience

M. Sierra Marín, F. Fuertes Velez, I. Reta Decoreau, P. Lorenzana Moreno, M. Ispizu Ojanguren, J. Arresti Sanchez, J. Martin Urreta

Hospital de Basurto, Oncologia Radioterapica, Spain

Purpose. To evaluate the survival of patients with newly diagnosed Glioblastoma Multiforme depending on the surgery performed.

Materials and methods. From April 2002 till January 2012, 82 patients (43 male and 39 female) mean age 63.3 (range from 29 to 82) with newly diagnosed Glioblastoma Multiforme was treated in our hospital. The treatment protocol consisted of total surgery, partial surgery or biopsy only followed by external radiation therapy (6000 cGy in 30 fractions with conformal radiotherapy technique) and concurrent chemotherapy with Temozolomide (75 mg/m²/day) and adjuvant Temozolomide (TMZ) monotherapy for 6 cycles (150–200 mg/m²/5days). The median survival was evaluated depending on the type of surgery performed. Total surgery was realized in twenty-nine patients (35.4%), ten patients (12.2%) were treated by partial surgery and biopsy only was made in forty-three patients (52.2%). Survival was calculated using Kaplan–Meier and Long Rank (Mantel Cox) methods.

Results. Overall survival for our patients was 14.5 months. Two patients who were diagnosed on April 2006 and December 2010 having undergone biopsy and total surgery respectively are still alive. Twenty-eight patients were treated by total surgery followed by concurrent chemotherapy–radiotherapy (QTRT) with TMZ and adjuvant TMZ with a median survival of 18 months. Partial surgery followed by concurrent QTRT and adjuvant TMZ was realized in 10 patients with a median survival of 19.9 months. Forty-two patients were not treated by surgery and received treatment which consisted of concurrent QTRT and adjuvant TMZ with a median survival of 10.8 months. The longer survival was 68 months in a patient who was treated by total surgery followed by concurrent QTRT and adjuvant TMZ. According to the Long Rank method a significant median survival difference is observed between biopsy and partial surgery with a p = 0.016 and Biopsy and total surgery also, with a p = 0.004. There is no difference between total and partial surgery with a p = 0.861.