

Purpose/objective. The purpose of this study is to assess the Volumetric Arc Therapy (VMAT) as a competitive technique for Cranio-Spinal Irradiation (CSI) compared to the conventional 3D Conformal Radiotherapy (3D-CRT) technique.

Materials and methods. Two patients were planned for CSI with both 3D-CRT and RapidArc® (Varian Medical Systems VMAT solution). Both patients were treated in the prone position. Plans were generated using Varian Eclipse Treatment Planning System (TPS) and delivered by a Varian Clinac DHX with MLC120 and on-board imager for daily on-line image guidance. Dosimetric verification was performed with PTW Octavius and Sun Nuclear ArcCheck phantoms.

Results. The RapidArc® CSI plans were able to achieve similar or improved OAR sparing when compared to 3D-CRT. RapidArc® plans were able to decrease the maximum dose to all of the relevant OARs. However, for lungs and bowel, the mean doses were elevated due to the increased number of beam angles. Also RapidArc® plans resulted in a better dose coverage and homogeneity in the target volume. A possible 3 mm shift had only a minor effect on the dose distribution of the RapidArc® treatment whereas with the 3D-CRT the shift would result in an unacceptable error (30–40%) of the calculated dose.

Conclusions. The dosimetric results indicate that RapidArc® is an advantageous alternative for CSI. The “low dose bath effect” remains a controversial issue in all IMRT treatments, especially in the paediatric population. With the RapidArc® technique only a treatment plan is required to deliver the total treatment dose, eliminating the need for field matching techniques. Moreover, the resulting dose distribution is also less volatile for technical uncertainties of the treatment.

<http://dx.doi.org/10.1016/j.rpor.2013.03.126>

Elderly patients with glioblastoma and only biopsy

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Introduction. Glioblastoma (GB) is the most common and malignant brain tumour in adults. Extensive surgical resection followed by radio-chemotherapy is the current standard treatment. When biopsy is the only surgical procedure the prognostic is worse. Age and KPS (Karnofsky Performance Status) are the most important clinical prognostic factors. Elderly patients (>70 years) are often excluded from trials and their treatment is controversial. The aim of this study is to assess the outcome of GB patients with biopsy-only surgical procedure and show the differences between patients younger and older than 70 years.

Material and methods. We reviewed 102 of 298 patients (34.2%) treated underwent biopsy in our hospital between January 2000 and December 2011, prospectively included in our data base. There were 58 males (57%). Median age was 60 years and median KPS 70. Twenty-one elderly patients (20.6%, range: 71–81) and 81 younger patients (79.4%, range: 24–70). Statistical methods: All calculations were performed by SPSS 18.0 version; *p*-values of <0.05 was considered significant.

Results. Thirty-nine patients (38.2%) received no further treatment after biopsy. The most frequent causes for withholding treatment were a low KPS (92.3% of untreated patients had a KPS < 70 (*p* < 0.0001)). Seventeen of the 21 elderly patients had a KPS < 70 (80.9%). Furthermore, 52% of elderly patients received no adjuvant treatment (11/21).

Conclusions. 1/3 of patients with GB undergo a biopsy as the only surgical procedure and one out of three patients were not treated after biopsy, rising to 50% in elderly patients. The main associated factor with no treatment was lower KPS, frequently viewed in elderly patients (80% of elderly patients had a KPS < 70).

<http://dx.doi.org/10.1016/j.rpor.2013.03.127>

Epidemiology of anaplastic astrocytoma according to the WHO 2007 classification: A report of 22 cases from a single institution

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Purpose. The objective is to evaluate age, survival, time to tumor progression, therapy, and the effect of treatment at the time of progression in patients with anaplastic astrocytoma, who had been treated with radiotherapy and concomitant temozolamide. **Patients and methods.** Between January 2007 and December 2012, 22 patients (12 male, 10 female and median age 49 years) with highly anaplastic astrocytomas were diagnosed in our hospital. According to any of several protocols, we treated 18 patients with radiotherapy and concomitant temozolamide. Eleven of them underwent surgery. Three patients were treated with exclusive radiotherapy with palliative intention. There was a patient who died from cardiovascular disease.

Results. The overall median survival of all patients was projected as 22 months (range 8–68 months). Five patients had a first relapse and the median time to first tumor progression was 13 months (range 1–24 months). The median survival time measured after the first progression was 11 months (range 1–24 months). The eleven patients who were operated had a median survival of 22 months and not operated with RTCT treatment of 13.5 months. Progression-free survival (PFS) at 6 months, the primary protocol end point, was 100% and PFS at 12 months was 89%. The 6, 12, 24 and 60 months survival rates were 100%, 82.3%, 47%