with inferior overall survival. Gender, country of birth, smoking status and diabetes did not significantly impact on survival. Multivariate analysis showed that age, clinical trial participation, IRSAD score and ECOG performance status were all independent predictors for overall survival.
Conclusions: This is the first study to demonstrate a profound effect of clinical trial participation, regardless of treatment arm and independent of age and performance status; and socio-economic status on survival in patients with GBM. The reasons why more socio-economically disadvantaged patients have shorter survival is unknown. These are novel and intriguing findings that require further exploration and could be used to help inform and improve best clinical management of patients with GBM.

8717 POSTER

Application of IMRT Technique in Treatment of Malignant Gliomas. Assessment of Treatment Tolerance

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Background: Assessment of tolerance of combined modality therapy of patients with malignant gliomas irradiated using IMRT technique. We compared dose distribution in IMRT and conformal 3D treatment plans.
Materials and Methods: Between 2009 and 2010 in the Oncology Center in Krakow 17 patients with malignant gliomas received combined modality treatment. Mean age was 53 years (range 28−66 years). All patients were in good performance status (WHO 0−1). There were 15 patients with glioblastoma multiforme and 2 with anaplastic astrycytoma. Ten patients underwent complete resection and 7 partial resection. Patient were irradiated using IMRT technique with a total dose of 60 Gy in 30 fractions. All patients concurrently received temozolamide in the dose of 75 mg/m^2. In all patients we performed additional plans using 3D conformal radiotherapy (3D-CRT) techniques and compared with IMRT plans. The 3D-CRT plans were prepared using 3−4 fields and IMRT plans consisted of 7−8 fields. The primary objective was to treat the planning target volume and to minimize the dose to organs at risk (OAR). Volumetric analysis, target coverage and conformity of prescribed doses were used in plan comparison.
Results: Treatment tolerance was vary good in all patients. Only 4 patients needed steroids during treatment. Adjustment of the dose distribution to the target volume was improved and the critical structures were better spared in the IMRT plans than in 3D-CRT plans. For all patients the mean dose and the maximum dose to OAR were significantly reduced in IMRT plans. With respect to target volume, IMRT technique reduced the maximum dose while increasing the minimum dose, resulting in improved conformity. In same patients with tumours located very close to OAR it was impossible to give 60 Gy for target volume with 3D-CRT technique because of not acceptable doses in OAR.
Conclusions: The IMRT technique combined with concurrent temozolamide is well tolerated and offers significant advantages comparing to 3D-CRT. Application of IMRT allows dose reduction at OAR without compromising target coverage.

8718 POSTER

Influence of Presenting Symptoms on Treatment Patterns and Outcomes in Glioblastoma Multiforme (GBM)

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Introduction: GBM is an aggressive disease with poor outcome despite multi-modality treatment. Presentation is highly variable, ranging from neurological deficits and seizures to generalised symptoms of raised intracranial pressure such as headaches. We sought to review presenting symptomatology of GBM in a neuro-oncology referral centre, and the potential influence on management and outcome.
Methods: A prospectively maintained institutional database was reviewed to identify patients (pts)with diagnosis of GBM. Cliniopathologic data were analysed. Presenting symptoms were stratified into: neurological deficit (Def), headaches (HA) or seizures (Seiz), and one, two or three symptoms. Debulking and optimal adjuvant therapy rates were compared with chi^2 test, overall survival was compared with log-rank test method. Comparisons were made across stratified groups, e.g. HA vs no HA.
Results: Between Sept 2004 and Dec 2009, 121 evaluable pts were identified. Median age at diagnosis was 59 years (range 18−76) and 74% (n = 90) of pts were males. Common sites of tumours were parietal (28%), frontal (22%) and temporal (21%) lobes, with left hemisphere predominance (51%). In total, 81 pts (67%) presented with one symptom: neurological Def 46 (38%), HA 22 (18%) and Seiz 13 (11%), while 40 (33%) presented with two symptoms: Def + HA 27 (22%), Def + Seiz 10 (8%) and HA + Seiz 3 (2%). No pts had all 3 symptoms at presentation. Comparing pts with 1 vs 2 symptoms, rates of debulking were 65.4 vs 67.5%, p = 0.84 and rates of optimal therapy were 64.2 vs 60%, p = 0.69 [4 and 2 pts were not treated, respectively − see Table]. Hazard ratio for overall survival between groups was 0.71 (CI 0.49–1.34, p = 0.08). 52 pts (43%) had HA at presentation. Debulking (71 vs 62%, p = 0.39) and optimal treatment rates (62 vs 65%, p = 0.71) were similar. HR for overall survival was 1.08, p = 0.69.
Conclusion: Our data shows that the majority of pts (81%) with GBM presented with at least 1 symptom, neurologic Def being the most common. We have also shown that presenting symptoms have no significant influence on management or outcome. Time from onset of symptoms to diagnosis may be a confounder, however, as treatment may be instituted earlier. We intend to examine this.

	Debulked	%	Optimal Adjuvant Tx	%	Suboptimal Adjuvant Tx	%	No Adjuvant Tx	%	Total
HA	14	64	15	68	6	27	1	5	22
Def	29	63	30	65	14	30	2	4	46
Seiz	10	77	7	54	5	38	1	8	13
	53	65	52	64	25	31	4	5	81
Def + HA	22	81	16	59	10	37	1	4	27
Def + Seiz	4	40	6	60	4	40	0	0	10
HA + Seiz	1	33	2	67	0	0	1	33	3
	27	68	24	60	14	35	2	5	40

8719 POSTER

Long-term Follow-up in Adult Patients With Low-grade Glioma (WHO II) Postoperatively Irradiated. Analysis of Prognostic Factors

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Background: There is little consensus about the optimal treatment for low-grade glioma (LGG), and the clinical management of LGG is one of the most controversial areas in neurooncology. Radiation therapy is one option for treatment of patients with LGG whereas other options include postoperative observation. The aim of this study is to report the long-term follow-up of a cohort of adult patients with LGG post-operatively irradiated in one institution, and to identify prognostic factors for progression free survival.
Material and Methods: Between 1975 and 2005, 180 patients with LGG (WHO II) received postoperative irradiation after non radical (subtotal or partial) excision. Patients had to be 18 years of age or older, and have histologic proof of supratentorial fibrillary (FA), protoplasmic (PA) or gemistocytic astrocytoma (GA). Radiotherapy was given within 3 to 10 weeks after surgery. The treatment fields were localized and included the preoperative tumour volume, with a 1−2 cm margin, treated to a total dose of 50 to 60 Gy in 25 to 30 fractions over 5 to 6 weeks.
Results: Actuarial ten- year progression free survival (APFS) in the whole group was 19%. The worse prognosis was reserved for patients with GA. Ten-year APFS rates for GA, PA and FA were 10%, 18% and 22% respectively.
Conclusion: The findings from our long-term cohort of 180 patients with LGG confirmed by uni- and multivariate analysis demonstrated that only astrocytoma histology significantly determined the prognosis. The best survival is reserved for patients with the fibrillary variant, and the worst for the gemistocytic one.

8720 POSTER

Positive Osteopontin Expression in High Grade Gliomas Predicts Poor Prognosis

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Background: Hypoxia associated proteins are of particular interest because of recent advances in targeted therapy. High expressions of hypoxia-inducible factor-1α (HIF-1α) and carbonic anhydrase IX (CA IX) appear to be strong prognostic indicator in many malignancies, however their role is unclear in high grade gliomas. Moreover, one of the other novel hypoxia-regulated molecule-osteopontin (OPN)-may play a role in high grade gliomas and may provide further therapy options. We performed an immunohistochemical analysis of OPN, HIF-1α and CA IX and correlated their expression levels with patient survival.
Material and Methods: A total of 92 (40 female, 52 male) patients with WHO grade 3 (n = 19) and grade 4 (n = 73) were included in the study. The median age was 49 (18−77) years. Gross total resection had