ganglia in 3, brain stem in 4, cerebellum in 1, spinal cord in 2. Histological confirmation of LGG was obtained in 25/36 pts. Median follow up is 16 months. Till now 23/35 pts have been treated by CT alone with the following radiological results: 1 CR (36 m+), 4 GPR (16+, 17+, 19+, 41+ m), 5 PR (12+, 15+, 16+, 29+, 30+ m), 6 OE, 7 SD. Tumor progression was observed in 12 pts, during CT in 6 pts and after completion of CT in 6 pts. Only 1/35 pts have died of disease.

In conclusion, 22/35 (60%) pts demonstrated at least an objective response to this CT regimen and in 30% of the pts the shrinkage of the tumor was greater than 50%. Toxicity of the regimen has been acceptable. CT is able to defer the need for further treatment in the majority of pts. *Supported by ARC.*

268 POSTER

FRACTIONATED STEREOTACTIC RADIOSURGERY (FSR) AND CONCURRENT TAXOL FOR RECURRENT HIGH GRADE BRAIN TUMORS (RBT)

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Use of concurrent FSR and Taxol for RBT is reported.

Twenty-six patients (pts) with tumor volume from 3.1 to 138.5 cc (mean 44.7) using from 1 to 4 collimators (mean 2.6) were treated. Treatment dose included FSR from 450 to 900 cGy (mean 644.2) weekly times 4 and concurrent Taxol in escalating doses from 80 mg/m^2.

Follow-up ranged from 1.4 to 7.9 months (mean 4.5). Of 17 pts with follow-up MRI, 2 (11.8%) had diminished mass, 9 (52.9) were stable and 6 (35.3%) increased. Of 6 with increased mass effects, 5 had biopsy or resection. Of these 5 undergoing subsequent pathologic evaluation, 2 showed no tumor and 2 contained tumor cells with occasional bizarre nuclei characteristic of radiation effect. The 5th had rare tumor cells at gross resection.

Early data shows FSR/Taxol is well tolerated and warrants further investigation.

269 POSTER

RADIOTHERAPY OF GERMINOMA

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Between July 84 and December 93 we irradiated 8 patients (median age 20 years) with histologically confirmed germinoma with a uniform protocol. The aim was the reduction of late sequelae by use of a low dose per fraction. Whole brain and neuroaxis received 30 Gy, the tumor region was boosted to 45 Gy (single dose 1.5 Gy). No additional treatment was given. Median follow-up is >6 years. In each case a complete remission was achieved. No local or distant relapse occurred. Overall median survival is 77 months. One patient died after 68 mo. from progressive brain atrophy (without evidence of disease, another one developed a moderate mental retardation. The intellectual function of 6 patients remained unchanged. No growth retardation occurred. Fertility was not assessed definitely in most of the cases. *Conclusion:* Local control and survival were excellent, but even the use of low single doses might result in late radiation injury.

270 POSTER

MEDULLOBLASTOMA IN CHILDREN: THE AMSTERDAM EXPERIENCE

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To identify factors relevant to treatment outcome in medulloblastoma, 78 pts were studied, who received postoperative radiotherapy (RT) from 1972 till 1994 at the AMC or NKI: 35 Gy CSI and 54 Gy to the posterior fossa (PF). Surgery (SR) was complete in 33, subtotal (>90%) in 32, partial/biopsy/cytology only in 15 pts. Brainstem involvement 29 pts, none in 44 pts, unknown in 7 pts. Leptomeningeal metastases (LM) by CAT scan/MRI/myelography/clinical symptoms in 11 pts, and 10 had positive cytology only. Seventeen pts had normal findings and have been analyzed together with 42 pts had no assessment. Interval SR-RT 9–146 days, median 47. Chemotherapy (CT) was given as part of two local sandwich protocols (18 and 13 pts), or international studies, SIOP I 8 pts, SIOP II 12 pts, UKCCCSG/PNET 5 pts, and 2 otherwise; 22 pts had no CT.

Five and 10 year actuarial survival (S5 and S10) are 66% and 60%, progression free S5 64%. Only 2 factors were related to S: LM-, S5 74%, vs LM+, S5 11%, ($P = 0.0006$) and interval between SR and RT: <2 mo (56 pt), S5 75%, >2 mo (24 pt) S5 46%, S10 23% ($P = 0.0013$). All 24 pts had CT, in 15 pts starting <28 days from SR, in 8 pt between 29–35 days, and in 1 pt at 44 days, due to postoperative problems.

Conclusion: The main prognostic factors were leptomeningeal metastases, and interval between SR and RT.

271 POSTER

RADIOTHERAPY IN THE MANAGEMENT OF OPTIC PATHWAY GLIOMAS

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We reviewed 35 patients with optic pathway gliomas treated at our department with radiotherapy (RT) alone (25 patients) or with postoperative RT (10 patients). Six patients in the RT alone group had optic nerve tumors and 19 had chiasmal tumors. In the subtotal surgery plus RT (STS-RT) group one patient had an optic nerve tumor and nine had chiasmal tumors. The RT alone group included 9 new cases with neurologic ± visual deficits, 12 new cases with significant visual deficits, 2 relapsed tumors, and 2 cases that had progressed during observation. The STS-RT group included 2 new cases with neurologic ± visual deficits, 5 new cases with significant visual deficits, 2 patients with relapsed tumors and one patient who had progressed during chemotherapy.

The 10-year actuarial progression-free survival rate (10-y PFS) was 86% for patients with optic nerve gliomas and 41% for patients with chiasmal tumors. The 10-year actuarial survival rate (10-y S) was 75% for patients with optic nerve gliomas and 51% for patients with chiasmal gliomas.

PFS and S rates were significantly lower in infants (10-y PFS: 19%; 10-y S: 33%), in patients with neurologic deficits (10-y PFS: 17%; 10-y S: 25%), in those with increased intracranial pressure (10-y PFS and 10-y S: 9%), and in patients with depression of consciousness (10-y PFS and 10-y S: 17%). Treatment modality did not influence the outcome but radiation doses ≤ 49 Gy were associated with significantly lower PFS and S rates.

272 PUBLICATION

PRELIMINARY RESULTS OF A PROSPECTIVE EVALUATION OF ^{3}H-THYMIDINE LABELING INDEX IN GLIOMAS

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The aim of the present study is to evaluate the biological meaning and the potential clinical usefulness of cell proliferation evaluation in gliomas, based on ^{3}H-thymidine labeling index (TLI) which provided powerful prognostic indications in several other malignancies. Twenty-nine patients with untreated primary gliomas have been to date enrolled. Fresh tissue samples were incubated with ^{3}H-thymidine for one hour. The fragments were then washed and fixed in paraffin. Five-micron sections were processed by autoradiography and stained with hematoxylin and eosin. TLI was expressed as the ratio between the labeled cells and the total number of tumor cells counted (at least 3000). Five cases were not evaluable due to massive tumor necrosis. In the other 24, the TLI ranged between 0.1% and 33.3%, with a median value of 4.8%; interquartile range was between 3.5% and 11%. TLI values did not show a significant association with the site or size of tumor but had a trend with hystological grade. In the few cases in which the follow-up has been already long enough, higher TLI values occurred in patients with shorter survival. These are preliminary findings until a number of events adequate for a statistical analysis is reached. The following preliminary conclusions can be drawn: (1) TLI is feasible in a high percentage of gliomas; (2) the wide range of TLI values found in the present series indicate that it may be used to select patient groups with different biological and/or clinical characteristics.

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