irradiation (WBRT). The SRT dose was prescribed to the 90% isodose and the target volume encompassed the enhancing tumour including a 2 mm safety margin.

Results: Median local progression free survival was 19 months and the median survival was 10 months. The majority of patients had a functional improvement as measured prospectively by the activities of daily living. Neurological deterioration was noted in 2 patients within 1 month of SRT. There was no survival benefit in patients receiving WBRT in combination with SRT.

Conclusions: The results of SRT in patients with solitary brain metastases appear equivalent to neurosurgical excision in terms of local control and survival. SRT is a useful palliative treatment – it is well tolerated, non-invasive and out-patient based and is particularly of value in situations where survival is determined by the systemic course of disease. The role of WBRT in combination with SRT remains to be defined.

439 PUBLICATION

Biological evaluation on short course conformal radiotherapy of malignant gliomas

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Purpose: The 3D conformal radiotherapy gives the possibility for different dose escalation forms. It has been tried to establish a biological dose distribution model to evaluate the advantages of 3D treatment planning and to examine different therapeutic dose regimens.

Methods: Biological equivalence equations based on LQ model were utilized to transform the physical dose calculation of Voxelplan-Virtuose 3D treatment planning system. In this way theoretical biological dose distributions could be generated. Conventional opposed fields and 3D conformal treatment plans of patients with suprasellar glioma were investigated, biological equivalent dose /BED/ formula and 2.0 for alfa/beta ratio of CNS normal tissues were assigned. Physical and biological dose distributions and histograms were compared to each other. The main staindpoint was the dose of the midline structures.

Results: The superiority of the 3D conformal teletherapy proved unambiguous evaluating the biological dose distribution model. The protection of the vital regions remained significantly better under a "hypofractionated" regimen of 2.5 Gy daily single doses and with adopted conformal shrinking fields technique, than with conventional 2 Gy fractionated opposed fields treatment.

Conclusion: This experiment suggests that a shorter-course conformal radiotherapy regimen with definitive dose may be the therapeutical choice for suprasellar-lobar high grade gliomas with poor prognosis. Evolution of different biological dose distribution models probably will help us choose better therapeutic regimens in different sites as well.

440 PUBLICATION

Preliminary results of a phase II study: Irinotecan (CPT 11) in chemotherapy naive patients with glioblastoma

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CPT 11 shows activity in mice bearing human central nervous system tumor xenografts. The aim of the study is to evaluate the efficacy of CPT 11 in 2 groups of chemotherapy naive patients (pts) with glioblastoma (Gb): A, pts with unresectable tumor or uncomplete resection, 3 cycles (c) before radiotherapy, and B, pts with recurrent tumor. CPT 11 is administered every 3 weeks, at 350 mg/m^2. Brain CT scan or MRI evaluate the response every 3 c. As of today, 45 pts are included (A = 25, B = 20), 36 are evaluable for safety. Median age is 51 years [26–73], M/F = 20/16, and PS 0 (10 pts), 1 (16 pts) and 2 (10 pts). On 126 c (median 3 [1–9], A = 3 [1–7], B = 4[1–9]) worst grade (gr) toxicity, per c and per pt, in group A and B (A/B) is:

Toxicity	Neutropenia	FN	Diarrhea	As	Al	CS		
Grade	3	4		3	4	3	3	3
Per c (52/74)	3/6	3/1	1/1	2/3	–	3/4	–	2/6
Per pt (19/17)	1/1	2/1	1/1	2/2	–	3/3	-/3	1/2

FN: febrile neutropenia, As: asthenia, Al: alopecia, CS: cholinergic syndrom

On ten patients reviewed by the external radiological committee in each group: in group A, 1 PR not confirmed, 4 SD and 2 MR; in group B, 2 PR, 3 SD and 1 MR. Recruitment is still on going in group B. CPT 11 is active in pt with Gb with mild toxicity profile.

441 PUBLICATION

Combined therapy of PNET/medulloblastoma in children and young adults – Single institution expirience

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Purpose: This study was aimed to 1) evaluate treatment results of combined therapy (surgery, postoperative craniospinal radiotherapy with or without chemotherapy) and to 2) assess factors affecting prognosis.

Patients and Methods: During the period 1986–1996 we treated 78 pts with combined modality therapy. Entry criteria were histolgically proven diagnosis, age under 22 yrs. and previously no history of malignant disease. M:F = 48:24, aged from 1 yr. up to 22 years (Me = 8.6 yrs.). Postoperatively all pts. had CT examination, myelography or mieloscan. Also liquor was tested on malignant cells. According all these data we used Chang classification and Jencinns classification for prognostic factors. Survival rates were calculated using Caplan-Meier method and differences between curves with log-rank test.

Results: During the follow-up period with Me = 3 yrs, 2-year and 5-years overall survival and DFS were 66% and 51% respectively, and 53% and 47%. We diagnosed 32 relapses. Among investigated prognostic factors significantly better prognosis was in pts with total or subtotal tumor removal, without involvement of brain stem or spinal cord and without postoperative meningitis. Younger children had significantly poorer survival when compared with young adults. Pts. who started radiotherapy within 2 months, after surgery had better survival but without statistical significance. Finding of malignant cells in CSF seemed not to be significant risk factor.

Conclusion: Based on these factors standard and high risk group could be defined. Combined chemotherapy should to be investigate particularly for high risk subgroup.

442 PUBLICATION

Continuous hyperfractionated accelerated radiation therapy (chart) with fotemustine for malignant gliomas

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Purpose: To evaluate the toxicity and efficacy of CHART concomittant with intravenous fotemustine for patients (pts) with malignant gliomas.

Methods: In October 1996 we initiated a prospective study in patients with newly diagnosed anaplastic astrocytoma and glioblastoma. Seventeen pts; 12 males and 5 females, were eligible for the study. Eligibility criteria included: Histopathological confirmation, age between 16 and 70 years, a Karnofsky performance status of 70% or over, and normal liver function and normal blood counts. Radiochemotherapy was initiated 2–4 weeks after surgery. The portals were designed as opposed laterals covering the entire tumor volume + edema + 2 cm margin in the first phase (12 days) and tumor + edema in the second phase (4 days). Irradiation was continued all 7 days of the week, twice a day with at least 8 hours interval, with 1.6 Gy/fr. Hence a total of 5140 cGy was delivered in a total of 16 days. Fotemustine was given simultaneously with RT; 100 mg/m^2 IV on days 1st, 8th and 15th of treatment. Treatment evaluation follow up was performed with cranial CT/MRI 6 weeks after the completion of treatment and every 3 months in first year.

Results: All of the patients completed the treatment per protocol and only one greater than grade 2 toxicitiy (grade 3 trombocitopenia) was observed through all the treatments and the following 4 weeks. Six pts had died and 11 pts still alive and median survival is 14 months.

Conclusion: This treatment schedule is well tolerated without any serious side effects and median survival is highly comparable with the best reported results.