+ 93 months and "others": + 49 months). Their 5 years survival was similar (65%). BID regimen was elected only in 14% children and induced a higher mucosal toxicity (p<0.001) without affecting autcome.

Conclusion: In pediatric STS, in which long term survival and toxicity are equally important, RT can be confined initially to "high-risk" groups only. Delayed RT in "low-risk" ones who failed locally doesn't compromise the outcome.

1263   **POSTER**

Children osteosarcoma - treatment results and prognostic factors

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Objective: The aim of our study was to evaluate results of treatment and analysis of prognostic factors in children with nonmetastatic osteosarcoma.

Patients and methods: From 1987 to 1999 we treated 90 patients (pts) with classic high-grade osteosarcoma (OS), median age 15 years (range 3 to 18 yrs). 75 pts had large tumours with volume over 150 ml. The majority of pts (86%) had tumour in the region of the knee joint. Adjuvant chemotherapy after amputation was administered in 28 pts. Neoadjuvant chemotherapy was administered in 62 pts - intravenous or intraarterial in 46 and 16 pts, respectively (1 treatment- related death), followed by surgery (amputation in 32 pts, limb salvage in 26 pts, resection in 3 pts) and postoperative chemotherapy. Two- drug regimen (Adr, CDDP) was administered in 43 pts while 47 pts received chemotherapy by other protocols.

Results: During the 18 to 166-months follow-up period (Me=67 mts.), over-all survival rate was 62% and disease-free survival rate was 60%. Over-all survival rate was 49% in the adjuvant grip and 67% in the neoadjuvant group. The most significant prognostic factors were tumour volume (VT) and tumour necrosis. Over - all survival rate was 56% in pts with VT > 150 ml (75 pts) and 92% in pts with VT < 150 ml (15 pts). In the neoadjuvant group, 22 pts (36%) had over 90% tumour necrosis, 20 pts (32%) had 60-90% necrosis, and 20 (32%) had less than 60% necrosis. Over-all survival rates were 91%, 65% and 41% respectively. Significant differences in survival were also in relation to sex, duration of symptoms, LDH and alkaline phosphatase level, but not in relation to the type of chemotherapy applied (two-drug or multi-drug regimen) or the mode of preoperative chemotherapy administration (i.v./i.a.).

Conclusion: Tumour load and responsiveness to chemotherapy are two major prognostic factors in patients with nonmetastatic OS. The effects of Adr, CDDP regimen are similar to those of other more complex and toxic regimens.

1264   **POSTER**

Natural killer (NK) cell activity, Interleukin-6 (IL-6) and tumor necrosis factor (TNF) in children with brain tumor

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Immunocompetence seems to play an important role in host tumor defense. The aim of this study was to evaluate the number of NK cells, NK cell activity, levels of IL-6 and TNF in patients (pts) with brain tumor (BT).

Patients and Methods: In 12/21 pts with malignant (M) BT and 9/21 pts with benign (B) BT, aged 2–14 years, serum levels of cytokine, number of NK cells and NK cell activity were determined prior to neurosurgery and oncologic treatment. IL-6 and TNF quantification in serum samples enzyme immunoassay was applied. The NK cell activity was measured by cytotoxicity assay with 51Cr-labeled K-562 target cells. The number of NK (CD16+) cells was determined by indirect immunofluorescence with OK-NK monoclonal antibody.

Results: Elevated IL-6 level was found in 83% of examined MBT pts and TNF level in 75% MBT pts (p < 0.01*). Concentration of IL-6 and TNF were

BT Pts	NK cell activity (%) E:CS** 50:1			CD16+ cells ×10⁹/L		IL-6 pg/ml		TNF pg/ml	
	N	x	(range)	x	(range)	x	(range)	x	(range)
Malignant	12	14	(1–39)*	0.06	(0.01–0.18)*	203	(0–500)*	209	(0–880)*
Benign	9	28	(6–53)	0.15	(0.05–0.25)	6	(0–24)	29	(0–190)

**the ratio of effector and target cells

elevated in serum of 17% of BBT pts. Serum levels of cytokines are low in healthy control (to <28 pg/ml for IL-6 and <15 pg/ml for TNF). Number of NK cells and NK cell activity were significantly diminished in pts with MBT (see Table).

Conclusion: The difference in serum IL-6 and TNF content in malignant and benign BT pts was shown. Number of NK cells and NK cell activity were significantly decreased in pts with malignant brain tumor.

Central nervous system tumours

1265   **POSTER**

Neurologic function correlates with outcome in patients with non-ependymoma spinal cord gliomas

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Purpose: To identify prognostic factors in patients with non-ependymoma spinal cord gliomas.

Methods: Twenty-five patients were retrospectively studied from 1970 to 1999 at The University of Texas M. D. Anderson Cancer Center. The median age was 40 years (range, 1 - 58 years). The median follow-up was 54 months (range, 10 - 313 months). Nineteen patients had a biopsy, 5 had a subtotal resection, and 1 had a gross total resection. Twenty-two patients received postoperative radiotherapy (RT) (median dose, 45 Gy; range, 22 - 60 Gy), and 13 patients received adjuvant chemotherapy (median, 6 cycles). A neuropathologic review confirmed the World Health Organization tumor grade. Neurologic Function (NF) was graded as 1 to 4 at diagnosis, postoperatively pre-RT, post-RT, and at follow-up.

Results: Post-RT (within 3 months) NF (1 - 4) predicted for OS (5-yr. rates: 100%, 86%, 14%, and 0%; p = 0.003). The change in NF at follow-up from diagnosis ranged from -1 (improvement) to +3 (deterioration), with improvement in NF resulting in superior OS (5-yr. rates: 100%, 42%, 57%, 57%, and 0%; p = 0.01) and DMFS (5-yr. rates: 100%, 100%, 51%, 75%, and 0%; p = 0.02). NF (1 - 4) at diagnosis predicted for LC (5-yr. rates: 60%, 40%, 27%, and 0%; p = 0.0001). The number of grade > 2 tumors did not have a confounding effect on NF at diagnosis (Chi-square test; p = 0.13). There was a significant difference in local control (LC) (5-yr. rates: 48% vs. 0%; p = 0.0005), progression-free survival (PFS) (5-yr. rates: 43% vs. 0%; p < 0.0001), distant metastasis-free survival (DMFS) (5-yr. rates: 67% vs. 50%; p = 0.006), and overall survival (OS) (5-yr. rates: 78% vs. 30%; p = 0.02) in patients with histologic grade < or = 2 vs. > 2 gliomas. Increase in age adversely affected LC (hazard ratio, 1.07; p = 0.02), PFS (hazard ratio, 1.06; p < 0.01), and OS (hazard ratio, 1.04; p < 0.01). None of the patients developed radiation myelopathy. In a multivariate analysis, tumor grade was the most important predictor of PFS, DMFS, and OS. Gender, duration of symptoms, tumor location, number of involved vertebral segments, degree of resection, and duration of RT delay were not significant in a univariate analysis.

Conclusion: Incremental improvement in neurologic function and younger age may be important favorable prognostic factors for OS. This study confirms tumor grade to be the most important prognostic factor for LC, PFS, DMFS, and OS.

1266   **POSTER**

Probability and estimation of malignancy in women with pelvic masses, using a logistic model which combines: age, morphological ultrasound pattern and resistance index determination

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Objective: The purpose of this study is to evaluate the potential of a predictive model in characterizing the benign or malignant nature of ovarian tumors, analyzing these variables: age, tumor size, morphological ultrasound pattern, position of the vessels and resistance index (RI) value (last two obtained by Power Doppler).