912 POSTER

SURVIVAL IN PATIENTS WITH MALIGNANT GERM CELL TUMOUR PERSISTENT AFTER CISPLATIN-BASED INDUCTION CHEMOTHERAPY

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From 1980 to 1993 about 300 patients with advanced malignant germ cell tumour underwent cisplatin-based induction chemotherapy. Post-chemotherapy histology revealed persistent viable germ cell tumour in 30 of these patients (testicular: 26; extragonadal 4). Adjuvant chemotherapy was planned in 27 patients with residual non-seminoma, and irradiation in 3 patients with resected seminoma.

Results: Eighteen patients relapsed after post-chemotherapy surgery with a median time of 5 weeks (range: 11–45). In 13 patients the relapse developed before adjuvant chemotherapy was initiated. Only 2 of the relapsing patients were cured by salvage treatment. Currently, 14 patients are alive, one of them with stable disease (5-year survival: 41%). 10 patients with elevated markers prior to post-chemotherapy surgery had an 8% 5-year survival as compared to 72% in 20 patients with normal markers. 15 patients who initially presented with small volume disease (MRC criteria) displayed a 79% 5-year survival versus 8% in patients with more extended metastases.

Conclusions: After cisplatin-based induction chemotherapy only 40–50% of the patients with a residual malignant germ cell tumour are cured, with a particularly poor prognosis in those with elevated markers before post-chemotherapy surgery or those with a large metastatic burden at the time of diagnosis. These high-risk patients should have alternative and more intensive chemotherapy before undergoing surgery.

913 POSTER

TESTICULAR DOSE AND FUNCTION AFTER PARA-AORTIC STRIP AND DOG-LEG FIELD RADIOTHERAPY FOR SEMINOMA STAGE I

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During radiotherapy of testicular seminoma, the dose to the remaining testicle should be as low as possible to preserve the patient's fertility. Two different irradiation techniques have been applied: para-aortic strip (p.a.) or dog-leg field.

Measurements of the testicular dose using the Alderson phantom to a dose of 30 Gy, show a mid-plane dose in the range of 7–13 cGy and 15–40 cGy depending on the distance of the testicle to the symphysis, for respectively the p.a. and the dog-leg field technique. In patients this distance was found to be 12 cm (mean), corresponding to a predicted testicular dose of 9.5 cGy (p.a. field) and 25 cGy (dog-leg field). This significant difference in testicular dose between the two treatment techniques, explains the reduction of sperm counts observed after dog-leg field radiotherapy, which is lacking after p.a. irradiation. The reduced spermatogenesis is accompanied by comparable changes in FSH.

914 POSTER

THE ROLE OF A CYTOREDUCTIVE SURGERY IN NONSEMINOMATOUS GERM CELL TUMOR PATIENTS WITH SMALL RETROPERITONEAL MASS AFTER INDUCTION CHEMOTHERAPY

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We identify 64 nonseminomatous germ cell tumor pts, received 4 cycles of the induction chemotherapy with VAB-6, BEP or EP, who presented a residual retroperitoneal mass (RRM) < 2 cm (med. 1.0, range 0.4–2.0), measured by an abdomen CT scan and ultrasound. All pts were marker negative and underwent a retroperitoneal dissection. The correlation of pathologic findings with a size of RRM are presented in the table.

Histology	Number of pts	Tumor size (cm)		
		<1.0	1.1–1.5	1.5–2.0
Fibrosis/necrosis	47	33*	5*	9
Mature teratoma	16	-	3	13*
Malignancy	1	-	0	1
Relapse*	3	1 (14 mo)	1 (6 mo)	21 (25 mo)

Fibrosis/necrosis was observed in all resected RRM <1.0 cm. Pts with RRM >1.0 cm frequently had teratoma and 1 pt had a malignancy. Retroperitoneal relapses occurred in 3 pts. Our data suggests that surgery could be safely avoid in a marker negative pts who presented RRM < 1.0 cm.

915 POSTER

LOW DOSE RADIOTHERAPY FOR STAGE I SEMINOMA—FIRST RESULTS

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Patients and methods: 101 patients were irradiated postoperatively for stage I seminoma. 13 received a total dose of 30 Gy in 4 weeks (single dose 1.5 Gy) mainly to the paraaortic, iliac and inguinal lymph nodes (1983–1987). Further 58 were treated with a total dose of 25.5 Gy in 3.5 weeks (single dose 1.5 Gy). The target volume was gradually reduced to the paraaortic lymph nodes only. The remaining 30 patients were irradiated with a total dose of 20 Gy in 2 weeks (single dose 2.0 Gy), the target volume was the paraaortic region only. *Results:* The mean follow-up was 3.75 years. Only two patients experienced lymph node metastases, two more distant metastases. 5-year-survival was 95.9%, 7-year-survival was 91.6%. There was no significant loss in local tumour outcome or survival due to reduction of total dose and target volume at the same time. Applying a total dose of 20 Gy (single dose 2 Gy) an increased frequency of nausea occurred. *Conclusion:* Radiotherapy of the paraaortic lymph nodes with low doses in a short overall time results in excellent survival and low side effects.

916 POSTER

WEEKLY M-BOP AS A SECOND LINE AND VIP PLUS HIGH DOSE AS A THIRD LINE SALVAGE FOR GERM CELL CANCER

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Worldwide VP 16 or vinblastine/ifosfamide cisplatin (VIP) is established as the most frequently used second line therapy for germ cell cancer with 23% of patients achieving durable complete remission (Einhorn 1992, ASCP abst 599). Several authors have developed regimens for poor risk patients giving cisplatin more frequently that q21 (eg. BOP, POMP, HIPE, BOP/VIP) though none have been as extensively tested as second line therapy as VIP. To investigate this issue 46 relapse patients have been treated with a methotrexate, bleomycin, oncovin, cisplatin (M-BOP) regimen developed from that of Wettlaufer *et al.* 1984;53:203. Treatments were given q7 for 4 weeks and then alternating 2 weeks on, 2 weeks off for a total of 8–10 treatments. 18/46 (39%) remain continuously relapse free (CRF) and 2 in stable disease for 2 or more years (11 of 31 (46%) BEP and 7 of 15 (46%) Carboplatin failures were CRF). The majority of patients failing this treatment proceeded to VIP, and more recently treated patients have received high dose treatment as consolidation (carboplatin 1200 mg/m^2 etoposide 1400–1500 mg/m^2, ifosfamide 6 g.m^2) with stem cell rescue. 9 of 27 (33%) patients undergoing 3rd line treatment achieved subsequent durable complete remission status, including 6 of 9 consolidated with high dose treatment. Currently 27 of 46 (59%) remain disease free, +2 static disease. With serious myelotoxicity less significant in BOP than VIP treated patients, and the recent failure of BOP/VIP as first line to improve over BEP, the results justify further exploration of this approach.

917 POSTER

DOSE INTENSITY IN METASTATIC NON-SEMINOMATOUS GERM-CELL TUMORS (NSGCT) OF THE TESTIS TREATED WITH FIRST LINE CISPLATIN, ETOPOSIDE, BLEOMYCIN (PEB) AND RESECTION OF THE RESIDUAL MASS

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Four courses of PEB (cisplatin 20 mg/m^2 days 1 to 5, etoposide 100 mg/m^2 days 1 to 5, and bleomycin 30 mg days 2, 9, 16 q. 3–4 weeks) or BEP (etoposide 120 mg/m^2 days 1, 3, 5) and resection of the residual mass can be considered standard therapy for metastatic NSGCT of the testis to-day. We studied the dose intensity of the PEB regimen in relation to a maintained complete remission (CR) or a continuous post surgical disease free status (NED) in 220 consecutive metastatic NSGCT of the testis treated at our institute between 1981 and 1990.

Thirty nine (17.7%) patients failed to be cured with the first line therapy, and the over all 5-year survival (Kaplan-Meier) was 90.4%. Over-all, 91 (41.4%) patients had dose reductions or a delay longer than