range of morning testosterone in healthy men. Mean level of testosterone was 3,46 nmol/L(SD:1,98 nmol/L), high level of FSH (mean 58,2 IU/L) and LH (18,75 IU/L) were measured. The difference to the lower limit of testosterone reference range is statistically significant (P-value: 0.0000). In the total group of patients with oral testosteron substitution 20 displayed with serum oestradiol below the normal range. Only 6 patients of the group showed normal BMD. The average of BMD values were significantly low, with a mean of 61%, compared to age matched control). DHEA levels were statistically significant low in patients with low BMD values.

Conclusion: Oral testosterone undecanoate substitution therapy is not optimal for long term substitution treatment to maintain normal hormone level and BMD value in these patients.

825 POSTER

Long-term fatigue and quality of life (QL) after cure for testicular cancer (TC): a comparison with survivors of Hodgkins disease (hd) and the general population (GenPop)

S.D. Fossa. *The Norwegian Radium Hospital, Dept. of Clinical Research, Oslo, Norway*

Aim: To assess the prevalence of long-term fatigue in TC survivors.

Methods: A mailed questionnaire with SF-36, HADS and a validated Fatigue questionnaire was answered by 791 TC survivors (mean age: 45 years), 12 years (mean) after primary diagnosis. Among these, 660 pts. had an out-patient examination and blood sampling.

Results: 16% of the TC pts. had chronic fatigue as compared to 24% after HD and 11% in the GenPop. Type of previous treatment (surgery only, radiotherapy only, chemotherapy +/-), duration of follow-up and age at survey were not associated with fatigue, whereas this was the case for current co-morbidity, educational level, and current and previous psychological distress. Depression was more correlated with fatigue than anxiety. Chemotherapy given to those aged ≥40 years and ≤20 years at diagnosis was a risk factor for post-treatment fatigue. In general, the mental health of TC survivors was superior to that of HD survivors and of the GenPop. TC survivors displayed higher levels of anxiety but lower depression scores than the GenPop. Most QL parameters (SF-36) of TC survivors were more favourable than those of HD survivors. Except for pain, the scores of the QL dimensions were similar to those of the GenPop. In patients <50 years at survey, subclinical gonadal insufficiency was associated with chronic fatigue. For all patients, the HADS-Depression score remained an independent predictor of chronic fatigue together with the Mental and Physical Component Summaries of the SF-36.

Conclusion: Chronic fatigue and decreased QL represent a lesser problem in middle-aged TC survivors than in HD survivors, but remain a larger problem than in the GenPop. Mental health, in particular depression, seems to be an important predictor of fatigue together with somatic health. Patients aged ≤20 or ≥40 years at chemotherapy appear to represent risk groups for chronic fatigue.

826 POSTER

Clinical characteristics, treatment and outcome of patients (pts) with bilateral testicular germ cell tumors (BTGCT)

L. Geczi[1], F. Gomez[2], M. Bak[1], I. Bodrogi[1]. [1] *National Institute of Oncology, Chemotherapy C and Clinical Pharmacology, Budapest, Hungary;* [2] *Centre Leon Berard, Lyon, France*

Purpose: The clinical characteristics, treatment and outcome of BTGCT in connection with the widespread use of cisplatin based chemotherapy was analyzed in a retrospective study.

Methods: The study involved 2386 pts treated between 1988 and 1998 with testicular cancer in our Department at the National Institute of Oncology.

Results: 72 pts had BTGCT; 19 cases (0.8%) were synchronous and 53 cases (2.2%) metachronous. Of the 19 synchronous BTGCT pts (median age 37.7 years, range 19-71) 13 had concordant seminoma (70%) and 7 discordant histology. The clinical stages were: 8 I/A, 5 I/B, 1 II/A, 2 II/B, 1 III/A, 2 III/B. The 5-year overall survival was 85%, three pts died, 2 due to tumor progression. The median follow-up is 93 months, range 31-150). In 53 pts with metachronous BTGCT median age at the diagnosis of the 1st tumor was 28 years (range 16-41), median time to second tumor was 76 months (range 18-203). Nine had concordant seminoma, and 9 concordant nonseminoma. Among the 53 pts 2 had a family history of TGCT, 5 (13%) had testicular maldescent (in 2 cases bilateral), 7 testicular atrophy, 1 azoospermia. 68% of the pts were younger than 30 years at the 1st tumor diagnosis. At the 1st TGCT diagnosis the following clinical stages were detected: 14 I/A, 21 I/B, 15 II/A, 2 II/B, 1 III/B. 22 pts were treated with chemotherapy. At the 2nd TGCT diagnosis 26 I/A, 16 I/B, 3 II/A, 1 II/B and 7 III/B stages were registered. In 38 cases chemotherapy was used. No relapse occurred between the two tumors. The 5-year overall survival was 95% (median follow up 42 months, range 27-121). Two relapses occurred after primary therapy, 1 patient died due to tumor progression.

Conclusion: The overall incidence of BTGCT is low, the majority of patients have a good prognosis. These results argue against the introduction of systemic contralateral biopsy at the 1st TGCT diagnosis in all pts in Hungary. Better identification of pts at risk for a 2nd TGCT is not possible by the proposed clinical risk factors, that is why education and long term follow up are important in the early detection of a second TGCT.

Immunobiology and biological therapies

827 POSTER

Immunotherapy for stomach cancer with the apoptosis-inducing human monoclonal antibody SC-1

H.P. Vollmers[1], F. Hensel[1], S. Brändlein[1], W. Timmermann[2], B. Illert[2], M. Wilhelm[3], L. Reindl[4], A. Thiede[2], H.K. Müller-Hermelink[1]. [1] *Pathology, University Wuerzburg, Wuerzburg, Germany;* [2] *Surgery, University Wuerzburg, Wuerzburg, Germany;* [3] *Medical Clinic, University Wuerzburg, Wuerzburg, Germany;* [4] *Missio. Clinic, University Wuerzburg, Wuerzburg, Germany*

Purpose: Stomach carcinoma belongs to most dangerous malignant diseases worldwide. Treatment is mostly limited to radical gastrectomy, lymphadenomectomy and in cases of irresectable tumors to chemotherapeutical approaches. But even then, according to the number of people killed worldwide by this cancer, the prognosis is very poor and there is a big need for additional adjuvant therapies.

Methods: We have recently described the human monoclonal antibody SC-1, which was isolated from a patient with gastric cancer by hybridization of lymphnode cells with a heteromyeloma cell.

The moderately affinity-maturated IgM antibody (DP49) SC-1 binds to a novel modified form of membrane-bound CD55 (DAF-B, decay-accelerating factor), that is specifically overexpressed on stomach carcinoma cells and absent on other tumor cells or healthy tissue. DAF-B therefore exists in two different glycosylated forms on stomach carcinoma cells, in addition to the ubiquitously distributed 70 kD isoform, which protects cells from lysis through autologous complement, a specific modified 82 kD DAF-B is coexpressed. A tyrosine phosphorylation of 60, 75 and 100 kD proteins and a serine dephosphorylation of a 35 kD protein is observed shortly after SC-1 induced apoptosis. SC-1 apoptosis involves activity of caspases 6, other investigated caspases like caspases 3, 8 and 9 seem not to be involved in this process. In addition SC-1 apoptosis is independent of p53 and bcl-2.

Results: The antibody binds to 25% of tested intestinal-type and 70% of diffuse-type stomach adenocarcinoma. The antibody induces specific apoptosis in vitro and in vivo in animal studies. Used in a clinical trial with 44 stomach carcinoma patients, significant apoptotic and regressive effects on tumor cell proliferation in primary tumors and metastases could be observed without any toxic side effects.

Conclusion: Human cancer patients are the best source for tumor-specific and tumor-reactive reagents (cells, factors, antibodies) and the human hybridoma technology offers the only and unique technique for identification of new targets on tumor cells, new tumor-cell related mechanisms and complete human antibodies for diagnostic and therapeutical purposes. Human antibodies like SC-1 give hope for more effective and less harmful treatment of carcinoma and for the understanding of tumor-related mechanisms.

828 POSTER

Combined maintenance treatment of cancer patients responders to previous chemotherapy with immunotherapy (recombinant interleukin 2), hormone therapy (medroxyprogesterone acetate) and antioxidant agents: clinical outcome, effects on cachexia symptoms, on proinflammatory cytokines and evaluation of quality of life

G. Mantovani[1], A. Maccio'[2], C. Madeddu[1], E. Massa[1], M. Mudu[1], C. Mulas[1], G. Gramignano[1], V. Murgia[1], M. Lusso[1], L. Mura[1]. [1] *Cattedra di Oncologia Medica, Dipartimento di Scienze Mediche Internistiche, Cagliari, Italy;* [2] *Divisione di Ostetricia, Ospedale Sirai, Carbonia, Italy*

An open, non-randomized phase II study was carried out including all patients treated with whatever chemotherapy or combined modality regimen