operation and 24 hours and 4 to 7 days later for β-HCG, AFP, LDH, PLAP, LH, FSH, testosteron, estradiol and prolactin. Relevant serial counts and relations were only shown in this series by β-HCG, estradiol, testosteron and LH.

In all patients we found increased levels of estradiol in the testicular vein blood. It is 30 times higher than in the cubital blood. If estradiol is also increased in the cubital blood there is a strong correlation to testosteron. There are no increased testosterone levels in patients with normal peripheral estradiol. We found eight patients with increased estradiol and testosteron levels in the cubital blood. These patients show high HCG levels and low levels of LH.

The estradiol-increases are depending on the HCG production of the tumour. The gonadal-pituitary feedback leads to the suppression of LH-expression. After tumour ablation the high estradiol and testosteron levels return to normal ranges parallel to the decrease of HCG. The LH level is increasing to normal in the same interval.

181 PUBLICATION

Testicular Cancer: Human Placental Alkaline Phosphatase (hPLAP)

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The Human Placental Alkaline Phosphatase (hPLAP) is a cell-surface associated sialo-protein which is physiologically concentrated at the syncytiotrophoblastic membranes of the terminal placenta. Different entities produce hPLAP with measurable serum-levels.

The data of 114 consecutive patients with germ cell tumours of the testes are presented: Of 47 seminoma 26 (55%) had a hPLAP of >100 mIU/l. There were 18/34 (53%) in clinical stage (cS) I, 4/10 (40%) in cS II A/B, 2/2 in cS IIC, one cS III was negative. The levels ranged from 101 to 1486 mIU/l. Of 67 non-seminoma (NSGCT) 22 (33%) had a hPLAP of >100 mIU/l. In pathological stage (pS) I there were 8/28 (29%), in pS II A/B 6/19 (32%), in cS II C 4/10 (40%) and in cS III 4/10 (40%). These ranged from 103 to 2553 mIU/l.

The mean half-life in cS I was 2.04 days, the median 1.30 days (range 0.52–7.30). Of the smoking patients 59% were above the norm, of the non-smokers 30% ($p = 0.006$). At complete remission (CR) the mean level of smokers was 46.3 mIU/l (0.1–251) compared to 8.5 mIU/l (0.1–49) of non-smokers ($p = 0.017$).

hPLAP is a marker for diagnosis, control of therapy and follow-up in patients with seminoma and NSGCT. The raised levels of smokers have to be recognized. Important in follow-up is a constant level. Raising hPLAP leads to search of progress.

182 PUBLICATION

Evaluation of the role of a single cycle of carboplatin as an adjuvant treatment in stage I seminoma and as a neo-adjuvant prior to radiotherapy in stage II

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Purpose: The treatment options for stage I seminoma include adjuvant radiotherapy and surveillance. However, radiotherapy carries acute morbidity and an increased risk of second malignancies, while surveillance may be difficult in the absence of reliable tumour markers and with an indolent pattern of relapse. Radiotherapy for stage II is well established and effective, but the risk of mediastinal relapse may be as high as 20%

We therefore evaluated the role of a single cycle of carboplatin in forty-one patients with stage I&II seminoma treated post orchidectomy at Velindre Hospital, Cardiff between 1993–1996.

Methods: The dose of carboplatin was AUC≈7 and the dose of radiotherapy for stage II was 35 Gy/17 fractions over three and half weeks using dog-leg technique. Thirty-two patients had stage I disease (age range 21 to 57 years, mean of 34.7 years). The median duration of follow-up is 24.5 months and the mean is 25.7 months. Of nine patients with stage II, three had stage IIA and six had stage IIB disease (age range 21 to 40 years, mean of 29 years). The median duration of follow-up is 23 months and the mean is 26 months.

To date all patients are in complete remission and well. Minimal side effects were recorded through one patient experienced G4 neutropenia & thrombocytopenia. otherwise treatment was well tolerated.

Conclusion: Adjuvant treatment with an out patient single cycle of carboplatin is a simple well-tolerated adjuvant treatment for stage I seminoma. Combined modality treatment for stage II seminoma is rational, simple and effective. However, larger number of patients with a longer period of follow-up is needed to determine whether a single cycle of carboplatin reduces radiation relapse rate in stage II disease. The efficacy of a single agent carboplatin is currently being tested in a phase III trial (MRC TE 19).

183 PUBLICATION

Prognostic factors in renal carcinoma

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In a prospective study, the prognostic value of Ki-67, Her-2, ER, PR, EGFR, Cath-D, P-53, the DNA index and the S phase, as well as the value of established prognostic factors (TNM classification, grading), was investigated in a unvariate analysis involving 67 renal-cancer patients.

Grading ($p < 0.0001$), nodal status ($p < 0.0001$), tumor stage ($p < 0.0002$), metastatic status ($p < 0.0004$), the DNA index ($p < 0.005$) and the S phase fraction ($p < 0.045$) as nuclear factors, as well as Ki-67 ($p < 0.040$), all showed statistically significant prognostic value. The remaining factors were not prognostically significant.

Differentiation between G1/2 and G3/4 was the most distinctive prognostic factor, with the total number of survivors differing by 60% during the observation period. In the collective comparing G1/2 patients with G3/4 patients, risk ratio was 8.901; that is, mortality risk for patients with G3/4 was nearly nine times higher than for G1/2 patients. As to T1/2 vs. T3/4, the risk ratio was 4.075; and 4.691 when comparing a DNA index of <1.0 vs. >1.0.

We also found that in the low-risk group with values of G1/2, T1/2, and a DNA index of <1.0 (n = 11), only 1 patient had died after 25 months. In the group with values of G1/2, T3/4, and a DNA index of >1.0, 7 of 9 patients were still alive after 25 months. However, in the high-risk group with G3/4, T3/4, and a DNA index of >1.0 (n = 9), no patients were alive after a 4-month observation period.

In summary, our study found that the following parameters are suitable for evaluating renal-cell cancer prognosis: TNM stage, grading, the DNA index, the S phase fraction, and Ki-67.

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184 PUBLICATION

Prognostic factors in the management of clinical stage I (CS I) nonseminomatous germ cell tumors of the testis (NSGCTT)

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Purpose: Surveillance after orchiectomy alone has gained great popularity in the management of CS I NSGCTT. But in an effort to identify pts at high risk of relapse, there has been a search for adverse prognostic factors. The aim of the study was to identify pts in whom a surveillance policy is less likely to be successful.

Methods and Results: 63 pts in CS I NSGCTT were stratified to different risk-adapted therapeutic approaches according to histopathologic findings of primary tumor. 15 pts with vascular invasion and majority of embryonal carcinoma component were treated with adjuvant chemotherapy. None of them experienced disease progression. Five pts with vascular invasion and majority of teratoma elements in the primary tumor were treated with primary RPLND. Two of them had pathologic stage II and underwent subsequent chemotherapy. One of them died due to disease progression 29 months after orchiectomy. 43 pts without vascular invasion were kept under close surveillance, which consisted of regular follow-up with tumor markers chest x-rays and CT of the retroperitoneum. Disease progression was observed in 5 (11.6%) pts 7–10 months following orchiectomy. They were treated with BEP chemotherapy and live with NED. The overall survival rate of all 63 pts was 98.4%.

Conclusions: The authors recommend risk-adapted treatment procedures in CS I NSGCTT pts. Only pts without vascular invasion in the primary tumor may be subjected to a surveillance policy.