Further investigation is needed to establish socioeconomic strata at a higher risk of testicular cancer and introduce proper preventive measures.

7182 POSTER

Risk factors for bleomycin induced pulmonary toxicity in germ cell tumor patients

K.F. Zahid[1], N. Muzaffar[1], M. Usman[2], N. Uddin[2]. [1]*Shaukat Khanum Memorial Cancer Hospital, Adult Medical Oncology, Lahore, Pakistan;* [2]*Shaukat Khanum Memorial Cancer Hospital, Radiology Department, Lahore, Pakistan*

Background: Bleomycin is one of the main drugs used as induction chemotherapy in germ cell tumor patients. Pulmonary toxicity is a fatal side effect of this drug. The aim of this study was to evaluate the risk factors for bleomycin induced pulmonary toxicity (BPT) in germ cell tumor patients.
Material and Methods: We retrospectively reviewed the medical records of 83 male germ cell tumor patients admitted at our hospital from March 2006 to September 2008. All patients were treated with bleomycin, etoposide and cisplatin chemotherapy with three doses of 30,000 IU of bleomycin per cycle for two to four cycles. All cases of lung toxicity ranging from fibrosis changes, consistent with BPT, noted on chest X ray or thoracic computed tomography scan, to dyspnea requiring treatment with steroids were identified. Risk factors predicting BPT were analyzed using P value generated from univariate and multivariate logistic regression analysis, 95% confidence intervals (CI) were also calculated. P value of less than 0.05 was considered statistically significant.
Results: The mean age of study population was 31 years (range 18−50 years). Fifty eight (69.9%) patients had non seminoma. Forty six (55.4%) patients were stage III and 7 (8.4%) patients had primary extragonadal germ cell tumors. Mean cumulative bleomycin dose was 273,000 IU. Fifteen (18.1%) patients developed BPT. In univariate analysis of BPT, glomerular filtration rate (GFR) <80 ml/min before chemotherapy ($p = 0.01$; 95% CI 1.36−14.23), age >40 years at time of bleomycin administration ($p = 0.03$; 95% CI 0.06−0.86), granulocyte colony stimulating factor (GCSF) use with chemotherapy ($p = 0.01$; 95% CI 1.35−21.39), presence of lung metastasis at presentation ($p = 0.004$; 95% CI 1.88−28.55) and primary extragonadal germ cell tumors ($p = 0.01$;95% CI 1.54−40.1) were significantly associated with an increased risk of bleomycin induced lung toxicity. On multivariate analysis, GCSF use with chemotherapy ($p = 0.01$;95% CI 1.83−178.6), presence of lung metastasis at presentation ($p = 0.006$;95% CI 2.11−91.42) and primary extragonadal germ cell tumors ($p = 0.01$;95% CI 2.16−722.4) were identified as independent risk factors for bleomycin induced pulmonary toxicity.
Conclusion: Primary extragonadal germ cell tumors, lung metastasis at presentation and GCSF use with chemotherapy are independent risk factors for BPT.

7183 POSTER

Outcomes in metastatic (met) germ cell tumours (GCT): 5-year experience from a single institution

M.P. Decatris[1], P. Kitsios[2], A. Horwich[3]. [1]*Bank of Cyprus Oncology Center, Department of Medical Oncology, Nicosia, Cyprus;* [2]*Bank of Cyprus Oncology Center, Department of Radiation Oncology, Nicosia, Cyprus;* [3]*Royal Marsden Hospital NHS Foundation Trust, Academic Department of Urology, Sutton Surrey, United Kingdom*

Background: Adherence to international guidelines is important in treating met GCT. We followed the European Consensus guidelines (Ann Oncol 2004) for most patients (pats) since their publication. Poor-risk pats or those with an incomplete response (IR) to chemotherapy (chemo) were discussed with the RMH[3]. This is the first report from Cyprus, on a series of consecutive pats treated with first-line chemo over the last 5 years (yrs).
Methods: All pats had met GCT. Standard BEP (Bleomycin, Etoposide, Cisplatin) chemo was given over 3 or 5 days (d). Good-risk pats received 3d BEP×3, intermediate/poor-risk pats 5d BEP×4. Where B was contra-indicated we used EP×4. From 12/2005 we adopted CBOP/BEP (C, carboplatin; O, vincristine) for pats with bulky poor-risk disease. All retroperitoneal lymph node dissections were carried out in the UK. Post-chemo follow-up (FU) was every 2/3/6 months in yrs 1/2−3/4−5 respectively.
Results: We treated 37 pats from 1/2004−4/2009. Their characteristics were: median age 30 (range 17−57); primary, testis n = 36, mediastinum n = 2; non-seminoma n = 30, seminoma n = 8 (bilateral testis primaries 1 patient); hCG, AFP, LDH raised in n = 18/21/24 respectively; Median values (range) were 71 (6−249,000), 81 (8−35,350), 1.6x upper limit of normal (1.0−6.9). IGCCCG prognostic groups: Good n = 24 (65%), intermediate (interm) n = 7 (19%), poor n = 6 (16%). Median chemo cycles 3 (range 2−11, total 166). Post-chemo surgery was performed in 7 pats (10 resections). After a median FU of 25.8 months (range 0.5−59.3) only 2 pats died of GCT. 3-year OS was 92% (all pats), 100% (good-risk) and 79% (interm/poor-risk). The overall 3-year failure-free survival (FFS) in 34 evaluable pats was 87% (65% in interm/poor-risk). The table below summarizes response outcomes and survival status.

Response	n = 37	%
CR	27	73
CR chemo	22	
chemo+Sx	4	
chemo+RT	1	
IR	7	19
Not evaluable	3*	8
Survival	n = 37	%
Alive+Disease-free	24	65
Alive with disease	7*	19
Status unknown	4	11
Died of GCT	2	5

*treatment ongoing in 3.

Conclusion: The 3-year OS of 92% illustrates how use of international guidelines can lead to satisfactory outcomes in small isolated treatment centres.

7184 POSTER

Docetaxel activity in second line treatment for urothelial carcinoma: a retrospective analysis

P. Martinez[1], C. Valverde[1], R. Morales[1], J. Rodón[1], C. Suarez[1], J. Baselga[1], J. Carles[1]. [1]*Vall d'Hebron University Hospital, Medical Oncology, Barcelona, Spain*

Background: There is not standard treatment for urothelial carcinoma after relapse or progression to first line treatment with platinum based chemotherapy. Docetaxel has emerged as an option in second line for patients with an optimal performance status based on its activity as single agent or in combination with platinum in first line treatment. In this setting, it has been reported a response rates of 31−60%. Very few trials has studied its activity as single agent after progression to standard chemotherapy regimen. To asses the activity of docetaxel in urothelial carcinoma as single agent in second line treatment we retrospectively review the patients treated in our hospital.
Patients and Methods: We retrospectively review our patients with advanced or metastatic urothelial carcinoma of the bladder or of the superior urinary tract who were treated with docetaxel in second line. Variables analysed were: Age, Sex, ECOG performance status (PS), site of primary (bladder vs. superior urinary tract), number of metastatic sites, docetaxel dose, number of cycles, response by RECIST criteria, time to progression (TTP) and survival (OS).
Results: Between April of 2005 and October of 2008 27 patients were treated with docetaxel as second line treatment. In 4 cases we were unable to collected completed data, so those patients were excluded for the present analyses. Of the 23 patients analysed, median age was 73 (range 59−85), 19 were male and 4 female, all of then had a PS of 0−2, primary tumour was located in the bladder in 20 cases, in the urether in 2 and in renal pelvis in 1 case. Median number of metastatic sites were two. Docetaxel was administred at 100 mg/m^2/21d but in two cases radiotherapy was administred concurrently and docetaxel dose was changed to 40 mg/m^2/7d during radiotherapy treatment. Median number of cycles administered were 3 (range 1−4). Response rate could be evaluated in 16 cases and no complete or partial response was observed. Stable disease was reported in 3 patients and progressive diseases in the other patients. Seven patients were not evaluable because of rapid clinical deterioration, probably related to progressive disease. Median time to progression was 55 days and median OS was 74 days.
Conclusions: In this retrospective analysis docetaxel has demonstrated little activity in this subset of patients. There is an emergent need to identify new drugs for patients who have progressed to platinum-based chemotherapy.

7185 POSTER

Neoadjuvant chemotherapy for invasive bladder cancer – single centre study on tolerance and response

B. Jyoti[1], C. Chan[1], D. Corgie[1], A. Choudhury[1], J.P. Wylie[1]. [1]*Christie Hospital NHS Foundation Trust, Department of Clinical Oncology, Manchester, United Kingdom*

Background: The 5% improvement in absolute overall survival (OS) at 5 years that has been shown with neoadjuvant chemotherapy in muscle

invasive bladder cancer has prompted clinicians to increasingly offer this to patients. However, there is little in the published literature assessing the tolerability and short term response to this approach outside of the trial setting. This retrospective study assessed these end-points in a single centre experience over a 10 year period.
Material and Methods: Between 1998 and 2008, 64 patients with invasive bladder cancer, were treated at The Christie with platinum based combination neo-adjuvant chemotherapy followed by definitive surgery or radical radiotherapy (RT). Grade 3/4 haematological toxicities were recorded. Creatinine clearance (CrCl) was calculated pre and post chemotherapy. Pathological response to treatment was assessed in those patients undergoing cystectomy.
Results: Median age was 66 (range: 37−81 years), 51 men and 13 women. The q21 day regimens included Cisplatin 70 mg/m^2 /Gemcitabine 1 gm/m^2 D1,8 (GCis)(44/64); Carboplatin AUC5 /Gemcitabine 1 gm/m^2 D1,8 (GCar) (15/64) and Cisplatin 70 mg/m^2/ Methotrexate 30 mg/m^2/ Vinblastine 4 mg/m^2(CMV) (5/64). The majority (45/64) received 3 cycles, 11/64 received 4. Eight patients received less than planned number of cycles. Six stopped after 2 and 2 stopped after 1 cycle (1 due to MI; 1 acute renal failure). Four patients required a dose reduction: 3 for grade 3/4 neutropaenia, 1 for grade 1 thrombocytopaenia. One required a change from GCis to GCar due to deterioration in renal function. Median CrCl pre chemotherapy was 60 (range:24−154) and 56 (range:21−174) post chemotherapy. The fall in CrCl following chemotherapy was statistically, but not clinically significant (p value < 0.001). Definitive radiotherapy was given to 37 patients. Median time from first chemotherapy to RT was 85 days (range:49−190) and to surgery was 94 days (range:51−201). Pathological response for those undergoing surgery was as follows: 6/27 pT0, 8/27 Ta-T1 and 13/27 $\geqslant$ T2. Forty three patients remain alive to date.
Conclusion: In this single centre study, neo adjuvant chemotherapy for invasive bladder cancer was delivered with minimal interruptions and acceptable toxicities. There was no marked delay in time to definitive treatment. With longer follow up, it will be of interest to see if the local response to chemotherapy is a surrogate for improved overall survival.

7186 POSTER

Effectiveness of adjuvant chemotherapy for invasive bladder cancer

A. Araújo[1], J. Savva-Bordalo[1], M. Ferreira[1], N. Sousa[1], J. Maurício[1], R. Begonha[1], S. Pinto[1]. [1]*Instituto Português de Oncologia do Porto FG EPE, Medical Oncology, Porto, Portugal*

Background: In Portugal bladder cancer is the fifth most incident cancer in man and accounts for over 500 deaths each year. The mainstay of treatment for invasive bladder carcinoma is surgery. We conducted a retrospective analysis of the clinical outcome of patients with ressected bladder cancer who received adjuvant chemotherapy at Instituto Português de Oncologia do Porto.
Material and Methods: We reviewed the medical records of patients with invasive urothelial bladder carcinoma who underwent surgical ressection followed by chemotherapy (CT) with adjuvant intent between January 1996 and December 2005. Data on demographic, clinical and tumour characteristics were collected. The primary endpoint was overall survival (OS). The secondary endpoint was disease free survival (DFS). Descriptive analysis of the main demographic and prognostic characteristics was performed. OS and DFS analysis was conducted with the Kaplan-Meier method. Differences between treatment groups were compared with the log rank test.
Results: We identified 30 patients who underwent surgery followed by adjuvant CT. Four were excluded from final analysis for not completing at least one course of CT and 1 was excluded because he had epidermoid bladder carcinoma. Of the 25 patients analysed, the median age was 65 (range 29−78) and 92% were male. Twenty-three had radical cystectomy and 3 had partial cystectomy. Disease-free margins were achieved in 14 patients. All patients had ECOG performance status 0 or 1 prior to treatment. Twenty-two patients had locally advanced disease (pathological stage III/IV). Median delay between surgery and CT was 6 weeks. All patients received platinum-based CT (11 had methotrexate-vinblastine-doxorubicin-platinum (M-VAC), 8 had gemcitabine-platinum and 6 had methotrexate-cisplatinum). Nineteen patients (76%) completed at least 3 courses of CT. Median follow-up time was 27 months. Disease recurrence was identified in 14 patients (11 had distant metastasis and 3 had isolated local recurrence). Three patients received palliative CT. Median DFS was 20 months. Median OS was 37 months (3-year survival: 52%). Patients treated with M-VAC tended to have longer DFS and OS, although not statistically significant.
Conclusions: Adjuvant chemotherapy is feasible outside of a clinical trial, with results similar to those reported in the largest meta-analysis published to date.

7187 POSTER

Clinical effectiveness of palliative chemotherapy for advanced bladder cancer

J. Savva-Bordalo[1], M. Ferreira[1], A. Araújo[1], N. Sousa[1], J. Maurício[1], R. Begonha[1], S. Pinto[1]. [1]*Instituto Português de Oncologia do Porto FG EPE, Oncology, Porto, Portugal*

Background: Bladder cancer is a common human malignancy and 25% of the patients have advanced disease at presentation. We conducted a retrospective analysis of the clinical outcome of patients with invasive or metastatic bladder cancer who received palliative chemotherapy (CT) over a 10-year period at Instituto Português de Oncologia do Porto, Portugal.
Material and Methods: We reviewed the medical records of patients with invasive or metastatic urothelial carcinoma of the urinary bladder who underwent CT with palliative intent between January 1996 and December 2005. The primary endpoint was overall survival (OS). Secondary endpoints were progression free survival (PFS) and overall response rate (ORR). Descriptive analysis of the main demographic, clinical and prognostic characteristics was performed. OS and PFS analysis was conducted with the Kaplan-Meier method and comparison between treatment groups was done by the Log Rank test.
Results: We identified 77 patients with urothelial carcinoma with a mean age of 66 (SD 9 years). Sixty-nine patients (89.6%) were male. Seventeen patients (22.0%) had received prior platinum-based CT, 12 as neoadjuvant treatment and 5 with adjuvant intent. The combination of gemcitabine with a platinum (GP) was used in 40 (51.9%), M-VAC was the regimen of choice in 19 (24.7%) patients and the association of methotrexate with a platinum (MP) was used in 18 (23.4%). Demographic and prognostic characteristics were well ballanced between treatment groups. M-VAC and GP groups received a median of 3 cycles of CT and MP a median of 4 cycles. The ORR was 46.8%. We observed 8 (10.4%) complete responses, 11 (14.3%) partial responses and 17 (22.1%) stable responses with no significant differences between treatment regimens. Median PFS was 5.8 months for GP, 4 months for M-VAC and 4.5 months for MP. Overall median PFS was 5.1 months. Four patients (5.2%) received second line CT. Seventy patients (91%) had cancer-related death. Median OS was 8.4 months. Patients treated with GP had an increased survival (11.2 months) although statistically not significant.
Conclusions: Prognosis of metastatic bladder carcinoma is poor. Our results are comparable to those of published clinical trials in this setting. Choice of CT regimen should be individualized according to patient tolerability and toxicity profile.

7188 POSTER

Outcomes of surveillance in unselected patients with clinical stage I testicular germ cell tumors: results of a single institution series

M. Capelán[1], M. Sanmamed[1], E. Esteban[1], B. Vivanco[1], G. Crespo[1], J.P. Berros[1], C. Muriel[1], M. Luque[1], P.J. Fonseca[1], A.J. Lacave[1]. [1]*Hospital Central de Asturias, Oncology, Oviedo, Spain*

Introduction and Objective: Inguinal orchiectomy (IO) followed by surveillance is curative in 50−80% of patients with clinical stage I testicular germ cell cancer (CSITC). This attitude reserving modern chemotherapy at the time of relapse is nearly always curative, avoiding unnecessary treatment-related toxicity. We report outcomes of active surveillance in all patients with CSITC registered in our institution analyzing prognostic factors of relapse.
Methods: From April 81 to March 09, Sixty-three patients with CSITC and independent of known risk factor or histology were included in a surveillance program consisting of a determination of tumor markers (TM), clinical examination, a chest X-ray and abdominal echography (monthly the first year, every three months the second year and every six months until completion during the following five years). A thoracic and abdominal CT scan examination was carried out only at the beginning and to confirm recurrence or if the echography was of low quality.
Results: There were 42 (66.7%) non-seminoma (NS) and 21 (33.3%) pure seminoma (PS); median age was 28 (limits 16−47) and 34 (23−60) years, respectively. After a median follow-up of 5.25 years (1−286 months), 17 (40.5%) NS, and two (9.5%) PS relapsed at a median of six months in NS (1−24); forty-three and 15 months in PS. For 12 (70.5%) NS, determination TM was the first sign of relapse and for 7 (18%) it was the only sign. Macroscopic relapses were in retroperitoneum in nine (50%) patients (eight NS, one PS). Seventeen (94.5%) patients were treated with cisplatin combination; median three cycles (3−4) and seven (38%) underwent total resection of residual masses. All patients are alive and disease-free except one who died due to an unrelated cause. The univariate analysis of prognostic factors revealed that only embryonal carcinoma component >40% entailed a higher risk of relapse ($p = 0.066$).
Conclusions: This single institution series of surveillance alone after IO in unselected patients with CSITC resulted in excellent outcomes suggesting that this primary attitude reduce the global burden of treatment and toxicity, apart from clinical risk factors or histological subtypes.