Table 1

Factor	ASTRO p value	LPA+2 p value
PSA	< 0.0001	< 0.0001
T Stage	0.0002	0.0003
Gleason	< 0.0001	< 0.0001
Radiation dose <>66 Gy	0.0066	0.001
PPC	< 0.0001	0.0001
Neoadjuvant – ADT	0.047	0.0011
Adjuvant – ADT	< 0.0001	< 0.0001

851 POSTER

Duration of toxicity following permanent I125 prostate brachytherapy

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Background: Convenience and a favourable toxicity profile have made prostate brachytherapy increasingly popular in the treatment of low risk prostate cancer (PC). However, toxicity may not be as low as initially thought with the current techniques. This study looks at the time course of the common toxicities following permanent I125 prostate brachytherapy.
Methods: 249 patients (pts.) with low risk PC treated between October 1998 and October 2004 are currently being followed post implant. The prescribed dose was 145 Gy MPD. A urethral sparing technique was used which aimed at keeping the urethral dose to less than 150% of the prescribed dose. Implants were done using preloaded needles with either loose or linked seeds. At each visit pts were questioned about sexual function, and genitourinary and gastrointestinal symptoms. Post-implant dosimetry was performed 1 month following the implant. Follow up occurred every 3 months in the first year, every 4 months in the second year, and every 6 months thereafter.
Results: Of the 249 pts., 3 pts. were lost to follow-up, and 1 had not returned for his 1 month post-implant dosimetry follow-up visit. The remaining 245 men had a median age of 67 years (range: 47–84 years) and a median follow-up of 24.1 months (range: 3.5 – 57.7 months). Forty percent received adjuvant hormones treatment. The toxicity profile is as follows:

GI pts.			GU pts.	
Grade	Acute	Late	Acute	Late
1	16	28	27	123
2	3	10	17	59
3	0	0	7	16

Ninety-one percent experienced some deterioration in urinary function and 27% experienced some rectal toxicity. Diarrhea and bloody discharge, and frequency, nocturia and dysuria were the most commonly reported rectal and bladder toxicity, respectively. The average duration of acute and late grade 1/2 rectal toxicities was 2.9/2.5 and 7.1/7.7 months, respectively. The average duration of acute and late grade 1/2/3 urinary toxicities was 3.0/2.8/2.3 and 14.5/11.0/11.5 months, respectively. Ninety-six men were known to have normal sexual functioning prior to implant, 53 developed some level of erectile dysfunction, and 29 became impotent, 15 post hormones. The median time from treatment to impotency was 6 months. Ten pts. regained functioning (5 with Viagra), with a median duration of impotency of 12.6 months. Positive correlations were found between the D90 (P = 0.005) and V100 (P = 0.004), and urinary symptom severity. No other relationships between severity and dosimetric values were noted.
Discussion: Brachytherapy was tolerated well, with low to moderate urinary, bowel and sexual toxicity in most pts lasting between 3 and 15 months. Elevated dosimetry values appear to be an indication of higher severity grade for urinary toxicity but not rectal toxicity. While almost all symptoms eventually resolved, the duration was longer than expected.

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Risk adapted management in clinical stage a (CS-A) nonseminomatous testicular tumors (NSTT): a critical appraisal

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Background: We previously reported that the patients (pts.) in CS-A NSTT who underwent retroperitoneal lymphadenectomy (RPLA) are more likely to relapse if their preorchiectomy AFP was >80 ng/ml, if they have >80% embryonal carcinoma or if there was microvascular tumor invasion (ISW 165:555, 1995). The aim of the present study is analysis of experience with surveillance in comparison to primary RPLA and cisplatin (CDDP)-based chemotherapy (CHT) according to risk factors in CS-A NSTT with normal values of serum tumor markers (STM) postorchiectomy.
Material and methods: 195 pts. entered a prospective but nonrandomized study, from 01.81–12.03. The pts. are divided into 3 groups according to primary risk adapted treatment. Arm A (n = 60) – surveillance. Arm B (n = 65) – "nerve sparing" RPLA with 2 cycles of adjunctive CDDP-based CHT in PS-B1/B2. Arm C (n = 70) – only 2 cycles of CDDP-based CHT in high risk (HR) group of pts. (as defined above).
Results: Arm A – 9/21 pts (42.9%) with HR relapsed (4 RPLN, 2 RPLN+lung, 1 inguinal LN+lung, 2 only elevated STM) within median free interval (MFI) of 12.3 months (M)(range 3–46) with CR following applied therapy in 6 pts (66.6%)(8 pts. necessitate surgery). Alive and free of disease (AFD) are 18 pts. (85.7%) at median follow-up (MFU) of 12.3 years (range 3.5–20.6). 6/39 pts. (15.4%) with low risk (LR) (without previously mentioned criteria) relapsed within MFI of 6.8 M (range 3–10) (3 RPLN, 1 lung, 2 only elevated STM) with universal CR following applied CHT. All pts are AFD after MFU of 9 years (range 1.9–18.7) (p < 0.05). Arm B – Relapses following RPLA in HR PS-A occurred in 7/35 pts. (20%) within MFI of 8.3 M (range 2–23) (5 lung, 1 RPLN, 1 only elevated STM with CR following CHT± surgery in 4 pts. (57.1%). 11 pts. with LN metastasis had universal survival. Overall, relapses occurred in 9/46 pts. (19.2%) with survival in 41 pts. (91.1%) at MFU of 14.6 years (range 8.75–17.25). Among 19 pts. with LR, only 2 pts. (10.5%) had LN metastases, whereas relapse rate was null in 17 fully available pts after MFU of 10.8 years (range 8.6–15.8) (1 lost of FU at 26 M, 1 died of other malignancy at 90 M). 18/46 pts. (39%) I n HR received adjunctive CDDP-based CHT vs 1/19 (10.5%) in LR group of pts. (p < 0.05). Arm C – 1/70 pts. (1.4%) HR pts. treated with primary CHT relapsed at 12 M in the lung and died despite salvage CHT and surgery. AFD are 69 pts. (98.6%) at MFU of 5.5 years (range 1.5–13.7).
Conclusions: We conclude that the pts in CS-A NSTT are not necessarily helped by initial RPLA. According to the results of the present study optimum therapy for HR pts are 2 cycles of CDDP-based CHT. Surveillance policy is acceptable mode of treatment in strictly selected group of pts with LR.

853 POSTER

Early death from comorbid illnesses among curatively-treated prostate cancer patients

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There is a need to better identify those patients with prostate cancer who may not benefit from treatment because they will die of other causes before their cancer becomes symptomatic. We sought to identify which comorbid illnesses are the most important to consider when advising patients about treatment options.
We conducted a population-based case-cohort study of patients diagnosed and treated for cure with radiotherapy or prostatectomy in Ontario, Canada between 1990 and 1998. Cases consisted of a random sample of 587 patients who died within 10 years of a cause other than prostate cancer. The comparison cohort consisted of 1655 patients randomly selected from all treated patients in the Ontario Cancer Registry (OCR). Data were collected from medical charts at the treating hospital or cancer centre and supplemented from physician office charts as needed. The sampling frame and some key variables were obtained using the OCR linked to electronic clinic and census data. Analyses were stratified by treatment type: radiotherapy or surgery. In addition to investigating the role of separate comorbid illnesses, we calculated patient's total comorbidity burden using the Cumulative Illness Rating Scale (CIRS).
The most common causes of death were heart disease (36.6%) and respiratory disease (18.4%). Overall, the disease ultimately causing death was identified as a comorbid illness (at cancer diagnosis) in 51.1% of cases; this proportion was 92.6% for cases dying of respiratory disease and 37.2% for heart disease deaths. Across both treatment groups and after controlling for age, comorbid disease was statistically significantly associated with at least a 2-fold increase in the risk of death in those with: moderate to severe cardiac, severe hematopoietic, moderate to severe respiratory, severe lower GI, and moderate to severe liver disease. For both the radiotherapy and surgery groups, each increment on the CIRS scale (range 0–25) was associated with a 13% increase in the risk of dying after controlling for age.
We identified those illnesses known at prostate cancer diagnosis that will be most likely to lead to an early death among patients being curatively treated for prostate cancer. The results have important implications for

selection of patients who might avoid unnecessary cancer treatments that are associated with serious sequelae.

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Chemotherapy vs. radiotherapy in clinical stage CSA and B1/B2 seminomatous testicular tumours: the two institutions experience

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Background: Radiotherapy (RT) applied to retroperitoneal and ipsilateral pelvic nodes represent standard treatment in CSA and B1/B2 seminomatous testicular tumours (STT), promising results have been reported with chemotherapy (CHT). The aim of the prospective non-randomized study was to analyze the survival, relapses, acute and late side effects following RT and CHT.
Material and methods: Between 1982 and 2003, 456 patients (pts) in CSA and B1/B2 STT were divided into 2 groups according to primary tumour treatment. Group A (1997–2003) CSA (n = 177): 170 pts received 2 cycles of CHT with carboplatin (CBDCA). CS B1/B2 (n = 17) underwent induction CHT (platinum (P) and etoposide (E)). Complete response (CR) to CHT was defined as complete radiographic resolution of metastasis or a <3 cm stable residual mass (rm). Partial response (PR) to CHT was defined as >3 cm stable rm followed by delayed selective consolidation with retroperitoneal lymph adrenalectomy. Group B (1982–1997), 286 pts (247 in CSA and 39 in CS B1/B2) received RT in majority of pts by linear accelerator (8 pts were treated using Co unit), applied to retroperitoneal and ipsilateral pelvic nodes. The prescribed dose at midplane was 30 Gy/18 fractions.
Results: Group A – after median follow-up (mfu) of 4 years all pts in CSA are alive and free of disease (afd). 1 pt (0.6%) relapsed in the retroperitoneal nodus at 28 months (m) and achieved CR with PE CHT. All pts in CS B1/B2 entered in CR following PE CHT (2 pts with RM <3 cm). 1 pt relapsed at 12 m in retroperitoneal lymph nodes and achieved CR with salvage CHT. All pts are afd after mfu of 55 m. Group B – after mfu of 10 years afd are 98% and 91% in CSA and B1/B2, respectively. Relapses were registered in 14 pts (4.9%) within mfi of 10 m. 9 (64.3%) relapsing pts achieved CR with CHT and/or RT: 7/10 in CSA and 2/4 in CS B1/B2. 7 pts died (4 of STT, 3 of intercurrent disease). 7 pts developed second malignancy within mfi of 160 m (lung 3 pts, non-Hodgkin lymphoma 1 pts, bladder 1 pts, opposite testis 2 pts)
Conclusions: Orchidectomy followed by RT for CSA and B1/B2 seminoma resulted in an excellent survival and low rate of complications and relapses. CBDCA CHT appear to be an acceptable alternative approach in CSA STT: application is easy, side effects are mild, relapse rate and late sequels are lower than after RT. However, primary CHT in CSA + B1/B2 STT necessitate long term follow-up studies in order to determine more precisely late events.

855 POSTER

Differences in degree and duration of bone protection with intravenous bisphosphonates in prostate cancer patients receiving androgen deprivation therapy (adt): results of a placebo-controlled trial

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Background: Although androgen deprivation therapy (ADT) is the gold standard of treatment for hormone-refractory prostate cancer (HRPC), the associated bone demineralization increases the risk of osteoporosis, osteopenia, and related skeletal fractures. Because of their beneficial effects on bone turnover, bisphosphonates have been investigated as a potential treatment to maintain bone integrity in such patients.
Methods: This prospective, placebo-controlled study included 97 men who were randomly assigned to 1 of 3 treatment groups after undergoing androgen ablation (LHRH-agonist therapy or orchiectomy). The treatment groups included: monthly intravenous (IV) clodronate infusions (n = 39); monthly IV zoledronate infusions (n = 27), or no bone protection (control; n = 34). Efficacy evaluations included PSA, serum testosterone, x-ray, bone scintigraphy, and dual-energy x-ray absorptiometry (DEXA) scans with densitometry performed every 6 months. Patients were followed for a minimum of 36 months.
Results: The average patient age was 63 years. Bisphosphonate treatment maintained bone mineral density to a greater extent than the control, with clodronate providing greater protection against osteopenia than zoledronate. The average time to development of osteopenia after ADT was 6 months in the control group, vs 24 months and 18 months in the IV clodronate and IV zoledronate groups, respectively. Likewise, the average time to develop osteoporosis was 24 months in the control group, compared with 28.3 months and 28.5 months in the IV clodronate and IV zoledronate groups, respectively.
Conclusions: Bisphosphonates should become the standard of care to maintain bone integrity in those patients receiving ADT for the treatment of HRPC. In this study, IV clodronate provided greater protection against osteopenia than IV zoledronate.

856 POSTER

Prostate size and the effect of hormonal manipulation

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Background: To evaluate prostate gland length and volume in a large population of men diagnosed with localized prostate cancer. Furthermore, to assess the effect of hormonal manipulation (HM), specifically the difference between luteinizing hormone releasing hormone (LHRH) agonist therapy alone (LHRH) compared to total androgen blockade (TAB).
Materials and methods: 3370 men with presumed organ confined prostate cancer underwent I^{125}/Pd^{103} prostate brachytherapy (PB) at a single institution from October 1997 through January 2003. Prior to PB, transrectal ultrasound prostate sagittal and transverse image based volume studies (VS) were performed at least once on all patients. A B-K medical systems ultrasound machine and biplanar probe was used for each VS. 363/3370 (10.8%) patients required a repeat VS specifically because they were considered suboptimal candidates for PB secondary to excessive prostate volume. Subsequently, this group was subjected to HM for the purpose of decreasing prostate size (cytoreduction) in preparation to PB. 313/363 (86.2%) of these patients were given cytoreduction with LHRH while 50/363 (13.8%) patients received TAB. TAB consisted of biclutamide 50 mg p.o. q day times 3 months in addition to LHRH 7.5 mg depot IM q 1 month $\times$ 3. After three months of cytoreductive therapy, a repeat VS was performed.
Results: The mean sagittal length and prostate volume for the entire group of 3370 patients was 38.6$\pm$6.5 mm and 41.9$\pm$18.4 cm^3, respectively. The mean prostate volume for the 313 patients who received LHRH only and the 50 patients who received TAB prior to any hormonal manipulation was 70.1$\pm$19.8 cm^3 and 76.9$\pm$24.5 cm^3, respectively. The mean prostate volume for the 313 patients who received LHRH only and the 50 patients who received TAB after receiving hormonal manipulation was 49.4$\pm$16.0 cm^3 and 49.7$\pm$16.6 cm^3, respectively. There was a significant difference in the mean percent decrease in prostate volume for those receiving LHRH versus TAB (28.9%$\pm$14.6% vs. 34.1%$\pm$14.2% (p = 0.022)).

Table 1: Prostate size results

Patient group	Original		Repeat	
(# patients)	Sagittal length (mm) (mean$\pm$SD)	Prostate volume (cm^3) (mean$\pm$SD)	Sagittal length (mm) (mean$\pm$SD)	Prostate volume (cm^3) (mean$\pm$SD)
All (3370)	38.6$\pm$6.5	41.9$\pm$18.4	N/A	N/A
LHRH (313)	47.2$\pm$6.8	70.1$\pm$19.8	41.1$\pm$6.6	49.4$\pm$16.0
TAB (50)	47.8$\pm$6.9	76.9$\pm$24.5	40.9$\pm$5.8	49.7$\pm$16.6

Conclusions: Whether for therapeutic benefits or strictly for prostate cytoreduction, the use of HM remains prevalent prior to PB. Controversy has existed regarding the use of LHRH versus TAB. This study strongly suggests that patients undergoing TAB experience a significantly higher reduction in overall prostate volume than those who receive LHRH agonist alone.

857 POSTER

Weekly paclitaxel plus carboplatin in patients with metastatic transitional cell carcinoma of the urothelium who failed MVAC: Phase II trial

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Backgrounds: Though MVAC is one of the standard care for *transitional cell carcinoma* (TCC), this regimen might be toxic for pretreated or elderly pts. There is no standard salvage treatment for pts who failed MVAC. Paclitaxel(P) is active agent for TCC and Carboplatin(C) has synergistic activity with P. P plus C is safely manageable and effective regimen for ovarian or lung cancer. Weekly administration of P plus C can be not only less toxic treatment for these pretreated pts but also more