

Abstract 886 – Table

	Bladder neck resection margin	Apical resection margin	Peripheral resection margin	Capsular penetration	Seminal vesicles involvement
Concordance rate for positive margin	76%	95%	94%	85%	81%
Concordance rate for negative margin	83%	74%	66%	59%	96%
Conversion rate from negative to positive margin	7%	18%	34%	34%	2%
Conversion rate from positive to negative margin	24%	3%	4%	15%	16%
% of missing information in CH reports	27%	22%	12%	33%	1%
	(10% of these had positive margin on review)	(20% of these had positive margin on review)	(50% of these had positive margin on review)	(38% of these had capsular penetration on review)	

Conclusions: In the TTH review, there was a trend toward GS upgrading. There was a significant discordance rate in the evaluation of resection margins and capsular penetration. Also a significant proportion of CH reports had missing information with regards to resection margin status and tumor extent. The study suggests the importance of central review of RP specimens by a TTH and the need of a standardized reporting system for RP specimens.

887

POSTER

Impact of mean rectal dose on late rectal bleeding following conformal radiotherapy for prostate cancer: dose volume effect

A. Zapatero¹, F. Garcia-Vicente², I. Modolell², P. Alcantara¹, A. Floriano², A. Cruz-Conde¹, L. Perez-Gonzalez², M. Lopez¹, A. Marin¹, A. Perez-Torrubia¹. ¹Hospital Universitario De La Princesa, Radiation Oncology, Madrid, Spain; ²Hospital Universitario De La Princesa, Medical Physics, Madrid, Spain

Purpose/Objective: To identify clinical and dosimetric factors predictive of a higher risk of grade 2 late rectal bleeding in patients with localised prostate cancer treated with three-dimensional conformal radiotherapy (3D-CRT) in a prospective dose escalation study.

Methods and Materials: We performed a retrospective analysis of clinical records and dose-volume histograms of 107 patients with T1c-T3 prostate cancer treated at this institution with 3D-CRT and a minimum follow-up of one year. Twenty-one patients were treated at dose level I (70 Gy), 57 patients were treated at dose level II (72 Gy) and 29 patients at level III (75.6 Gy). The mean ICRU reference dose was of 76.49 Gy, range 69.80 to 82.62 Gy. All dose prescriptions were to ICRU point (dose level I) or to the minimum isodose surface encompassing the planning target volume (PTV) (dose levels II and III). Neoadjuvant and 2-years adjuvant androgen suppression were given to 16 and 27 high-risk patients respectively. Late rectal bleeding were graded according to RTOG toxicity scores adapted for rectal bleeding.

Results: Six of the 107 patients (6%) experienced grade 2 rectal bleeding and only one patient (1%) at dose level II had grade 3 complication. The clinical variables considered for analysis were: age, pretreatment PSA, Gleason score, T stage, history of diabetes mellitus and gastrointestinal (GI) diseases, administration and type of hormonal therapy and presence of acute rectal symptoms during radiation therapy. The dosimetric variables considered were: mean ICRU dose, rectal volume, the maximal dose and mean dose to the rectal volume (Dmax and Dmean), NTCP and the volumes (percentage and absolute) of rectum receiving more than 30Gy, 40Gy, 50Gy, 60Gy, 72Gy, 75Gy, 78 Gy and 80Gy. On univariate analysis, only dosimetric factors were significantly correlated with grade 2 rectal bleeding: 1) rectal volume ($p=.024$), 2) rectal Dmean ($p<.0005$), 3) the percentage of rectal volume exposed to >30 Gy ($p=.005$), >40 Gy ($p=.001$), >50 Gy ($p=.001$), >60 Gy ($p<.00005$) and >72 Gy ($p=.016$), and 5) a higher NTCP ($p=0.001$). The results of multivariate logistic regression analysis indicated that both, the rectal Dmean (Exp(B): 1.268; CI 95%: 1.084-1.482; $p=.003$) or V60 (Exp(B): 1.105; CI 95%: 1.036-1.179; $p=.002$) correlated with grade 2 rectal bleeding.

Conclusion: The present study confirms a clear evidence of dose volume effect and the importance of intermediate doses (60 Gy) on the risk of rectal bleeding at this dose level. The predictive value of mean rectal dose could be explained by its strong correlation with intermediate doses and because its real value is less dependent on setup variability and internal organ motion.

888

POSTER

Cranial nerve palsies in metastatic prostate cancer- results of base of skull radiotherapy

J.M. O'Sullivan¹, A.R. Norman², H. McNair³, D.P. Dearnaley¹. ¹Royal Marsden Hospital, Academic Urology Unit, London, United Kingdom; ²Royal Marsden Hospital, Computing and Information, London, United Kingdom; ³Royal Marsden Hospital, Radiotherapy, London, United Kingdom

Background: Cranial nerve dysfunction caused by metastasis to the base of skull is a relatively infrequent but debilitating complication of prostate cancer that is traditionally treated by external beam radiotherapy and high dose steroids. There is very little data on response to therapy in the literature.

Methods: We examined the Royal Marsden Hospital prostate cancer database for patients with prostate cancer who were treated with external beam radiotherapy to the base of skull for cranial nerve palsies between 1st January 1995 and 31st December 2002. Data obtained included radiological findings, radiation dose and fractionation, biomarkers, and response to treatment.

Results: A total of 32 patients with a median age of 73 years (range 49-85) were identified as fulfilling the inclusion criteria. Increased uptake of isotope was seen in the base of skull in all patients on bone scan. The most common palsies were of the 6th, and 12th cranial nerves. Palsies were unilateral in all cases and multiple in 3 patients (9%). All patients were treated to the mid-plane using parallel-opposed beams of 6 Mev photons or Cobalt-60. Twenty seven patients (84%) received 20 Gy in 5 fractions in 7 days, with 3 patients (9%), treated with 30Gy in 10 fractions. All patients bar one were treated with a median Dexamethazone dose of 6mg daily in addition to radiotherapy. Sixteen patients (50%, 95% CI: 34-66%) had a response to therapy, 50% of which had complete resolution of symptoms. The median survival following base of skull radiotherapy was 3 months (range 1-36) with 14 patients (44%) living less than 2 months after completion of therapy.

Conclusions External beam radiotherapy is an effective modality in the palliation of cranial nerve palsies secondary to base of skull involvement by metastatic prostate cancer with a response rate of 50% in this series. Patients with this manifestation of prostate cancer have a very poor prognosis.

889

POSTER

Estrogens and a phytoestrogen (genistein) induce hypersensitivity of prostate carcinoma cell lines to low dose radiation in vitro

R.M. Hermann¹, H.A. Wolff¹, O. Balzer¹, H. Jarry², W. Wuttke², M. Rave-Fränk¹, C.F. Hess¹, H. Schmidberger¹. ¹Strahlentherapie und Radioonkologie, Universitätsklinik, Göttingen, Germany; ²Klinische und Experimentelle Endokrinologie, Universitätsklinik, Göttingen, Germany

As prostate carcinomas tend to express estrogen receptors (especially type β), we tested the potential of a combined therapy with an estrogen (estradiol) and a predominantly estrogen receptor β -stimulating phytoestrogen (genistein, a soy product) and radiation in LNCaP and PC-3 cells *in vitro*. The advantage of genistein compared to estradiol is its better tolerance in male patients.

With colony forming assays, we tested the clonogenic survival of the cells after incubation with different concentrations of genistein and estradiol and subsequent irradiation.

To evaluate the receptor expression of the employed passages of LNCaP cells, we isolated RNA, transcribed it into cDNA, and performed a hot start RT-PCR.

The influence of the combined treatment on cell cycle distribution was measured by FACS analysis after staining the cells with DAPI.