with IMRT were considered (incidence 7%). Late G2 and G3 GU TOX were 6% vs 7% and 3% vs 3%, respectively.
Conclusions: This study provides support for the use of WPRT in combination with HDSRT in the salvage setting in node-negative patients. Especially if delivered with modern IMRT techniques, WPRT did not result in any additional toxicity.

PD-0460
Hypofractionated prostate radiotherapy: Can biological equivalent dose volumes predict late rectal toxicity?
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Purpose/Objective: Numerous authors have attempted to establish models to minimise rectal late effects following prostate radiotherapy, most using data from standard fractionation regimes with disagreement as to predictive dosimetric values. This study looked to identify predictive Biochemical Equivalent Dose (BED) volumes, applicable for any treatment regime, using various dose mapping techniques.
Materials and Methods: We retrospectively analysed dose volume data for 172 prostate adenocarcinoma patients, median age 65.1 (range 48.1-75.5), treated at a single centre between 2006 and 2009 with radical radiotherapy. All patients received 3D_CRT or IMRT according to evolving practise with dose fractions as shown in the table.

Fractionation	52.5Gy/20#	50Gy/16#	74Gy/37#	60Gy/20#	57Gy/19#
Planning	3D-CRT	3D-CRT	IMRT	IMRT	IMRT
Number	11	64	9	7	81

Rectal dose-volume histograms (DVH) and dose-surface histograms (DVS) were calculated for each patient using standard rectal contouring (ano-rectal to recto-sigmoid junction) all performed or reviewed by the author. In addition distribution of dose to the latitude of the rectum was examined by converting the rectal surface dose into a 2D structure. Dose was converted into a BED using an alpha/beta ratio of 3 for the rectum.
Each patient completed a LENT-SOMA questionnaire to assess late rectal toxicity. For this study answers regarding issue with constipation or diarrhoea were not considered as this was not felt to represent true late rectal toxicity alone. Partition analysis was performed for all data and for IMRT alone to establish if there was a BED and volume for any given mapping technique that was statistically significant in predicting late rectal toxicity (score ≥2).
Results: Partition analysis from 0-100% of volume was performed at BED levels of 120Gy, 110Gy, 100Gy, 90Gy, 80Gy, 70Gy and 60Gy. At all of these doses there was no percentage volume of rectum receiving a given dose that was predictive for the development of late rectal toxicity regardless of dose mapping method and radiotherapy technique used.
Conclusions: This study does not support the hypothesis that incidence of toxicity significantly increases above threshold dose/volumes using BED. This conflicts with previous studies looking at dose volume in standard 2Gy per fraction and others looking at the use of Equivalent Uniform Dose to normalise data from varying fractionation regimes. The use of lateral dose distribution has not been shown to have any additional predictive power over conventional dose mapping. This may in part be due to unaccounted for movement of the rectum during treatment comprising dose mapping data. Further ongoing study is attempting to quantify this degree of intra-treatment movement and will be reported when available.

PD-0461
Characterization of nodal metastases in prostate cancer patients at high risk for lymph node involvement
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Purpose/Objective: The aim of the present study was to investigate the diagnostic gain in the detection of lymph node (LN) metastases by means of immunohistochemical (IHC) staining for pankeratin as compared to the routine histopathological evaluation. In addition, E-Cadherin (ECad) expression was investigated within the concept of epithelial mesenchymal plasticity.
Materials and Methods: Forty patients with a risk ≥10% but <35% for LN metastases (Partin tables) who were N0 at contrast-enhanced CT-scan and did not receive any prior treatment were included in the study. They all underwent a superextended LND followed by radical prostatectomy (RP). All LN (n=838) were completely serially sectioned at 300µm and stained for pankeratin (n=4498), in addition to one central H&E-stained section per LN. Disease positivity was defined as the presence of any metastatic deposits in a LN and classified as follows: Macro+ (> 2mm), micro+ (<2 mm but >0.2 mm) and ITC (< 0.2mm). ECad staining was performed on the diagnostic biopsies (n=36), RP specimens (n=39) and on the pankeratin-positive LN sections. Staining intensity was scored as negative/weak (1), moderate (2) or strong (3) and the staining pattern as inhomgeneous (0) or homogeneous (1). In case of staining heterogeneity, the most prevalent staining intensity was scored (Table 1).
Results: Sixteen out of 40 (40%) patients were found to be node-positive (N1) after routine H&E analysis. More specifically, 44 (5.3%) affected LN were found in which 25 Macro+, 19 micro+ and 9 ITC were detected. Step-section IHC analysis with pankeratin revealed metastatic disease in 2 patients that were previously N0. In each of these patients 1 affected LN was found, i.e. 1 LN harbouring a micro+ as well as a group of ITC and the other one harbouring only 1 group of ITC. Four additional affected LN in which micro+ and/or ITC were detected, were found in 3 patients that were already N1. Altogether, this detailed IHC analysis resulted in 50 (6.0%) affected LN, i.e. 25 Macro+, 24 micro+ and 17 groups of ITC, that were found in 18/40 (45%) patients. The majority of biopsies (92%) and RP specimens (79%) showed strong, homogeneous ECad expression. In contrast, ECad expression in the LN was found to be weak in about 60% of all cases. While the ECad staining pattern in the ITC and micro+ was mainly homogenous, the Macro+ showed a much more heterogeneous pattern (Pearson Chi-square p <0.0001).

Table 1. E-Cadherin expression in biopsies, RP specimens and LN metastases

	Biopsy			RP specimen				Biopsy		RP specimen	
Staining	**1**	**2**	**3**	**1**	**2**	**3**	**Pattern**	**0**	**1**	**0**	**1**
pN0	0	1	19	1	2	18	**pN0**	6	14	6	15
pN1	0	2	14	2	3	13	**pN1**	5	11	4	14

	LN metastases				LN metastases	
Staining	**1**	**2**	**3**	**Pattern**	**0**	**1**
ITC	11	6	0	**ITC**	0	17
Micro+	13	7	4	**Micro+**	9	15
Macro+	16	6	3	**Macro+**	21*	4

* p < 0.0001 Pearson Chi-square

Conclusions: IHC analysis of serially sectioned LN increased the detection rate of pelvic LN metastases only marginally. This labour-intensive and expensive procedure cannot be recommended as long as the clinical relevance of micrometastatic disease and ITC is not proven. Indicative to this could be the difference in ECad staining homogeneity between the ITC/micro+ and Macro+. The different staining intensities in the Macro+ may indicate an ongoing mesenchymal epithelial transition, presumed to be a mechanism for metastatic colonisation [Wells A 2008].

PD-0462
Post-prostatectomy WPRT does not increase the risk of second cancers: A single institution analysis of 953 patients.
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Purpose/Objective: Whole-pelvis radiotherapy (WPRT) may have a role both in the adjuvant (ADV) and salvage (SALV) setting after radical prostatectomy (RP) for prostate cancer (PCa). Aim of this analysis was to investigate a possible role of WPRT in increasing the risk of radiation-induced second neoplasms (2ndNPL) in the post-prostatectomy setting.