Fig 1 A) Mean DSHs with 10th–90th percentile B) Incidence & SE (proctitis) during RT.

Conclusions: To our knowledge, this is the first paper addressing patient-reported acute GI and GU toxicity data from large prospective studies. We identified clinically relevant reductions in acute GI and GU toxicity for patients treated with IG-IMRT compared to 3D-CRT. This is the result of significantly lower doses to OARs, achieved by improved techniques and tighter margins. Since delivered dose to OARs as well as acute toxicity itself are known predictors of late toxicity, we expect this will eventually translate in lower late toxicity levels.

OC-0591
Anatomical and functional pattern of local-lymph node recurrence after prostatectomy based on multiparametric MR
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Purpose/Objective: According to European and American guidelines, treatment options after radical prostatectomy are adjuvant radiotherapy or early salvage radiotherapy (RT). In both cases, only prostate bed irradiation is recommended because any remaining tumor or local recurrence are most frequently located at this site. Recurrence in other sites can therefore be overlooked. In this study, we aimed to evaluate the incidence and location of visible recurrence on pelvic multiparametric MR (mpMR), to define the radiological criteria of local recurrence and lymph node spread after radical prostatectomy, and to determine the association of clinical and pathologic variables with imaging results.

Materials and Methods: We retrospectively reviewed the clinical records and mpMR studies of 70 patients with PSA recurrence after radical prostatectomy. To investigate any association between clinical and pathological variables with imaging results, we recorded initial PSA, pT stage, pathological Gleason score, presence and location of extracapsular extension, vesicle involvement, margin status, number of positive margins, postoperative PSA, PSA at the time of MRI, PSA doubling time and open versus laparoscopic or robotic prostatectomy. Statistical analysis was performed using T-test and univariate and multivariate studies. MR protocol included T2 weighted TSE sequences, diffusion-weighted sequences, calculation of apparent diffusion coefficient values, and dynamic contrast-enhanced MR with time curves generated from regions of interest.

Results: mpMR was positive in 33/70 patients. We found no statistically significant differences between patients with positive or negative mpMR studies for any variables. Local recurrence occurred in 27 patients: perianastomotic (19), periurethral (1), right posterior to the bladder (3), left posterior to the bladder (1), right seminal vesicle bed (1), left seminal vesicle bed (1), and penile bulb (1). mpMR detected positive lymph nodes in 7 patients (14 regions) (10%): right external iliac (5), left external iliac (4), right common iliac (2), left internal iliac (1), right obturator (1), and left obturator (1).

Lower PSA doubling time was associated with positive lymph nodes (5.83 vs 17.35 months (p=0.05). Lymph node and local recurrence showed the same functional parameters in mpMR.

Conclusions: Nearly half the patients with PSA-recurrence after radical prostatectomy had visible disease in mpMR. Incidence of positive lymph nodes should be considered when planning adjuvant or salvage radiotherapy. We recommend mpMR-guided RT rather than blind salvage RT.

OC-0592
MRI-guided salvage IMRT for prostate cancer: are we missing the target?
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Purpose/Objective: A subset of patients experience a PSA recurrence (rPSA) following radical prostatectomy. Radiotherapy can salvage those patients, provided that all disease is encompassed within the planning target volume (PTV) and a sufficient radiation dose is delivered. We hypothesized that these requirements can be achieved more adequately with MRI-guided radiation treatment planning.

Materials and Methods: From January 2009 to April 2014, 238 patients with rPSA were referred to our department for salvage radiotherapy. According to protocol, patients received a planning CT without IV contrast as well as a planning MRI in treatment position. MRI consisted of T1-, T2-, and diffusion-weighted (with an apparent diffusion coefficient (ADC) map) sequences. Dose to the prostate bed was 66.0 Gy in 33 fractions for all patients, delivered through intensity-modulated radiotherapy (IMRT). All MRI scans were reviewed by an experienced uro-radiologist.

Results: Patients with a rPSA ≥ 5.0 µg/L or proven local recurrence were excluded from this analysis (n = 16). Of 222 evaluable patients, 183 patients received both a planning CT and MRI while 39 patients only received a planning CT for planning adjuvant or salvage radiotherapy. We recommend MRI-guided RT rather than blind salvage RT.