		Mean		Median	
Structure	Contour	HD95% (mm)	DSC	HD95% (mm)	DSC
Bladder	AI	4.32	0.93	4.04	0.94
	Manual	3.69	0.94	3.00	0.94
Bowel	AI	11.55	0.73	8.79	0.74
	Manual	7.17	0.79	7.48	0.79
Rectum	AI	5.43	0.87	4.19	0.87
	Manual	4.91	0.88	4.28	0.89
Uterus	AI	9.20	0.82	7.04	0.81
	Manual	6.14	0.87	6.10	0.87

Table 1: Summary statistics for each structure.

Qualitative assessment of the AI generated contours showed that the bladder and rectum were rated excellent or good in 96% of cases, requiring minimal editing. The bowel contouring was rated unacceptable in 16% of cases. The average time taken to edit the AI-generated contours was 12:20 minutes (06:20-17:35 minutes), with the bowel taking on average 07:30 minutes.

Conclusion

Initial experience has shown that auto-generated contours for the female pelvis are satisfactory, and that the time required for manual editing is feasible for most cases within an oART workflow. Bowel was the least acceptable structure and required considerable human adjustment. Further evaluation is underway to investigate the use of a bowel bag contour to reduce time required for bowel contour editing.

PO-1314 Magnetic Resonance guided radiotherapy (MRgRT) in Gynaecological cancer: targets and gains

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Purpose or Objective

To describe clinical experience and evaluate dosimetric gains in patients with primary gynaecological cancers treated with MRgRT at the Royal Marsden Hospital.

Materials and Methods

Patients with gynaecological cancer currently recruited in the PERMIT trial and treated on an MR-linac (Elekta Unity™) were identified. Online workflow description including adaptive methods, acute toxicity and clinical outcomes were documented. Daily adapted plans were evaluated to document differences in target and organ at risk doses (OAR) compared to a single C-arm linac plan by applying both plans to post-treatment T2 MR-linac images.

Results

From September 2019 – February 2021, 22 patients with gynaecological cancer were treated on the MR-linac for primary and recurrent disease. 15 patients had stereotactic ablative radiotherapy (SABR; 30Gy/3-5#); within this sub-group 4 patients were reirradiated following previous pelvic external beam radiotherapy (EBRT) treatment. 7 patients had Phase 2 boost (14.4-16Gy/8#). Using a daily target recontouring and replanning workflow the mean time taken to treat SABR and Boost patients is 44.13min (32.08min – 66.00min) and 37.04min (21.00min – 56.41min) respectively. Local control is 95% with only one patient demonstrating local progression 6 months after treatment. Out of field relapse occurred in 13.6% (3/22). G2 bowel and bladder toxicity was observed in 13.6%. Compared to C-arm linac VMAT plans, MRgRT with daily adaptation led to improved target dose without breaching OAR constraints. In particular, patients with pelvic targets close to the sigmoid and small bowel demonstrate a total increase in D95% PTV by 7.76% when utilising adaptive MRgRT.

Conclusion

MRgRT on MR-linac is feasible and isotoxic for a variety of gynaecological cancer targets. Complex targets with adjacent mobile OAR benefit most from MRgRT with enhanced soft tissue visualisation and online daily adaptation. Compared to C-arm linac VMAT plans, daily MR-linac plans demonstrate improvements in target dose without OAR dose sacrifice.

PO-1315 Treatment toxicities of cervical cancer with or without HIV infection in Botswana 2013-2020

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