dataset will evolve over time as more data become available. Secondly, "classical" trial end points such as overall and progression free survival may not be the most appropriate outcome measures in elderly-specific trials. Given the limited life expectancy, QoL is essential to take into account, and also, cost-effectiveness will be different from the general population. This makes quality adjusted survival, measured in quality adjusted life years (QALYs), a more suitable end point, allowing the answer to both questions: it reflects both the quantity of lifetime gained and the value of this time, and it provides a direct outcome measure to calculate the cost-effectiveness of the treatment. In order to calculate QALYs, utility scores should be collected prospectively. The EuroQol 5 Dimensions (EQ-5D), a short questionnaire consisting of five questions, is most frequently used for this purpose.

General and disease specific quality of life, toxicity and preservation of functional capacity are interesting secondary end points, scored with a uniform and internationally acknowledged scoring system. The additional use of the elderly specific questionnaire EORTC QLQ-ELD15 is recommended, which has recently been validated internationally (Wheelwright, Br J Cancer 2013). Results from surveys indicate that the large majority of elderly patients would be willing to participate in trials (Comis, JCO 2003; Townsley BMC Cancer 2006), but care should be taken to limit the complexity of the trial design and burden of study related examinations.

Results: Online adaptive MR-IGRT was implemented in September of 2014. Five patients with abdominopelvic malignancies have been treated with planned evaluation for treatment adaptation in the first 2 months. The clinical setting included neoadjuvant rectosigmoid (n=3), unresectable gastric, and unresectable pheochromocytoma. MR localization images were used to recalculate dose online for all cases. Re-contouring and re-optimization was deemed necessary for 3/5, while the initial plan deemed sufficient for 2/5 cases. Reasons for plan adaptation included change in target size, weight loss, and change in small bowel anatomy. The approximate times required for online dose calculation, re-contouring, re-optimization, and QA were 2, 15, 2, and 5 minutes, respectively. Treatment utilizing the online adaptive plan was completed successfully for all cases when deemed necessary.

Conclusions: Online adaptive MR-IGRT has been successfully implemented with planning and QA workflow suitable for routine clinical application. Clinical trials are in development to formally evaluate adaptive treatment of bladder, pancreatic, and oligometastatic abdominal malignancies.

**Treatment Adaptation (Tumor Response)**

**Initial Plan**

**Revised Plan**