Conclusion: SABR is an effective, safe and non-invasive alternative for the treatment of inoperable liver metastases from radioresistant tumor.

Electronic Poster: Clinical track: Lower GI (colon, rectum, anus)

EP-1280
Preoperative short vs. long course chemoradiation with delayed surgery for rectal cancer patients


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Purpose or Objective: To compare the clinical outcomes between short course chemoradiotherapy (SCRT) and long course chemoradiotherapy (LCRT) with delayed surgery for locally advanced rectal cancer patients retrospectively.

Material and Methods: Seventy two patients, staged cT3-4N0-2M0, had participated in a multicenter study. With regard to the SCRT arm, a total dose of 25 Gy of radiotherapy was delivered in 5 fractions and chemotherapy was given on days 1-3 and delivered 5-Fluouracil and Leucovorin 400mg/m² by bolus injection on day 1 and 5-Fluouracil 1200mg/m² by continuous infusion on day 2 and 3. And additional two cycles of chemotherapy was administered before the surgery. With regard to the LCRT arm, a total dose of 45 Gy at 5 Gy intervals) in the prone group compared to 53 patients were treated using the LCRT.

Results: From 2010 to 2015, 19 patients were treated using the SCRT and 53 patients were treated using the LCRT. Median Follow-up was 25.0 months (range, 3.0-58.0 months). The patient characteristics of the both arms were not significantly different. The sphincter saving rate (89.5 %, 94.3%), complete remission (21.1%, 13.2%), downstaging (47.4%, 26.4%), treatment complications including wound dehiscence, bowel adhesion, hematologic toxicities of the SCRT were not inferior results to those of the LCRT. Locoregional recurrence was seen in 1 (5.3%) patients in the SCRT, and 1 (1.9%) in the LCRT (p=0.442). Distant metastasis was seen in 1 (5.3%) patients in the SCRT, 12 (22.6%) patients in the LCRT (p=0.162). The 2-year disease free survival, overall survival in the SCRT and LCRT arms were 93.8% and 74.0% (P = 0.338), 90.0% and 91.2% (P = 0.448), respectively.

Conclusion: The preoperative SCRT was a effective and safe modality. We got a comparable clinical outcomes to the LCRT for locally advanced rectal cancer. We get a further study for randomized clinical study to compare between SCRT and LCRT.

EP-1281
DVH relationships in rectal cancer: effects of contouring methods and patient positioning

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Purpose or Objective: Preoperative chemoradiation for rectal cancer may cause acute bowel toxicity. Efforts to reduce such side effects include tracking bowel DVH relationships and proper patient positioning to minimize the risks. Our aim is to quantify volume and DVH relationship differences between prone and supine positioning as well as compare different contouring methods to account for such changes.

Material and Methods: Nineteen patients undergoing preoperative chemoradiation for rectal cancer were simulated supine and prone for plan comparison. Thirty-eight plans were compared, 19 prone, and 19 supine. Correlating prone and supine plans were constructed with similar target volumes, beam energies and arrangements. A single physician contoured the bowel bag (BB) and individual bowel loops (BL) with the superior border 1 cm above the PTV per RTOG guidelines. If the RTOG recommended boundaries fell short of the 5 Gy isodose line, additional CT slices were contoured on BB and BL structures to the 5 Gy isodose line and labeled as extended contours. Tabular dose-volume histograms were utilized to assess the volume of bowel receiving 5-50 Gy in 5 Gy intervals. Wilcoxon signed rank test as well as Spearman’s correlation tested all variables.

Results: The target volumes showed no statistical differences between supine and prone positioning (p = 0.7344, 0.8203, 0.3594). The median reduction in volumes from supine to prone contours for the extended contour BB, extended contour BL, RTOG BB, and RTOG BL was 316 cc, 156 cc, 324 cc, and 115 cc respectively. Wilcoxon signed rank sum test showed significantly reduced volumes at each dose level (5-45 Gy at 5 Gy intervals) in the prone group compared to supine (range p = 0.0039-0.0391). All combinations of contours (RTOG and extended contours of BB and BL) showed similar statistically significant reductions in volumes receiving each dose (except 50 Gy) in the prone position. All RTOG defined BB and BL volumes required additional contours to account for the entire volume receiving 5 Gy. RTOG contours required a median of 359 cc to the BB (range 209-1375 cc) and 113 cc to BL (range 37-271 cc).

Conclusion: Volume of bowel was less for nearly all dose levels (5 - 45 Gy) if the patient was positioned prone. Bowel loop contours correlated with bowel bag contours; suggesting they can be used interchangeably. BB and BL contoured volumes, by the RTOG definition, consistently fell short of the 5 Gy isodose line where the “extended contours” were a more complete DVH representation.

EP-1282
Does blood glucose level normalisation improve PET-based response prediction in rectal cancer?

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Purpose or Objective: Do preoperative chemoradiation therapy followed by total mesorectal excision (TME). The tumoral response to CRT is highly heterogeneous and about 15-30% of the patients achieve a pathological complete response (pCR). 18F-FDG PET/CT is