

P149

PROGNOSTIC IMPACT OF PREOPERATIVE CHEMORADIO THERAPY IN PATIENTS WITH LOCALLY ADVANCED LOW RECTAL CANCER HAVING LATERAL PELVIC LYMPH NODE METASTASES.

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Purpose: Although preoperative chemoradiotherapy (CRT) is a standard treatment for patients with locally advanced low rectal cancer (LALRC), the prognostic significance of preoperative CRT in patients with lateral lymph node metastases (LLNM) is unknown. The aim of the present study was to examine the prognostic impact of preoperative CRT in patients with LALRC having LLNM.

Methods: From 1985 to 2012, we analyzed 73 patients with LALRC having LLNM who underwent total mesorectal excision and lateral lymph node dissection. Patient population was subdivided into the CRT group (N = 30) who were treated with preoperative CRT and the surgery alone group (N = 43) who were treated without CRT. Clinicopathological characteristics were compared between the two groups. Furthermore, univariate and multivariate analysis were performed to assess the predictors of overall survival (OS), relapse-free survival (RFS) and local recurrence (LR) rate.

Results: Forty-six (63.0%) were male and 27 (37.0%) were female patients. Sixty-eight patients (93.2%) underwent R0 resection, but five patients (6.8%) had positive circumferential resection margin. The median distance of the tumor from the anal verge was 40 mm in both groups. The number of total, mesorectal, and LLNM were significantly smaller in the CRT group than in the surgery alone group. Five-year OS, RFS and LR rate of the CRT group were significantly better (78.2, 72.1 and 3.5%, respectively) than those of the surgery alone group (41.1, 25.4 and 39.6%, respectively). Multivariate analysis showed that surgery without CRT was an independent worse predictor of OS (HR 3.513, P = 0.004), RFS (HR 2.696, P = 0.021) and LR rate (HR 11.094, P = 0.001). A total number of lymph node metastasis ≥ 4 was also independent worse predictor of OS and RFS.

Conclusions: Preoperative CRT might have significant prognostic impact on patients with LALRC with LLNM treated with total mesorectal excision and lateral lymph node dissection. Preoperative CRT and lateral lymph node dissection should be considered for LALRC with suspected LLNM.

P150

ROBOT-ASSISTED VERSUS LAPAROSCOPIC RECTAL RESECTION FOR CANCER IN A SINGLE SURGEON'S EXPERIENCE: A COST-ANALYSIS, COVERING THE INITIAL 50 ROBOTIC CASES.

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Purpose: Since the introduction of the da Vinci® Surgical System, several studies have been published regarding the clinical and surgical benefits of robot-assisted colorectal surgery, but, only a few have reported a structured cost-analysis. The aim of this study is to compare surgical parameters and costs of robotic surgery with those of laparoscopic approach in rectal cancer based on a single surgeon's early robotic experience.

Methods: Data from the first 50 robotic (ROB) and from 25 laparoscopic (LAP), rectal resections performed at our institution by an experienced laparoscopic surgeon (>500 procedures) between 2009 to 2014, were collected, retrospectively analyzed and compared. Patient demographic, procedure and outcome data were gathered. Financial costs of the two procedures were collected and categorized into fixed and variable costs. The robotic learning curve was analyzed using the cumulative sum method (CUSUM).

Results: Based on CUSUM analysis, ROB group was divided into 3 phases (ROB1: 1-19; ROB2: 20-40; ROB3: 41-50). Overall median operating time was significantly lower in LAP than in ROB (270 min vs 312.5 min, P=0.006) and regression analysis showed a borderline significant interaction effect between type of surgery and year (P=0.058) suggesting a significant reduction of operating time only in ROB group. Length of hospital stay did not differ between groups (P=0.567). Overall mean costs associated with LAP procedures were significantly lower than ROB (P<0.001). A statistically significant reduction in variable and fixed costs were found between ROB3 and ROB1 (P<0.05). If we exclude fixed costs, the difference between laparoscopic and ROB3 were no longer statistically significant.

Conclusions: Even if our results suggest a significant optimization of costs with increased experience, robotic rectal surgery has significantly greater costs and operating times compared to standard laparoscopy. The dominant cost is fixed cost and efforts to reduce it include accurate patient selection and use in high volume, multidisciplinary centers.

Overall costs, Adjusted analysis*	Cof. (Std.Err.)	(95% CI)	P-value
Costs not including fixed costs			
Robot1 vs Laparoscopy	3201.5(677.5)	(1873.6-4529.3)	<0.001
Robot2 vs Laparoscopy	2053.8(678.5)	(723.9-3383.7)	0.002
Robot3 vs Laparoscopy	1444.9(837.3)	(-196.2-3085.9)	0.084
ROB 1 vs ROB 3	1854.9(828.0)	(231.9-3477.8)	0.025
ROB 2 vs ROB 3	842.4(840.9)	(-805.7-2490.4)	0.316
Overall costs			
Robot1 vs Laparoscopy	4773.1(675.3)	(3449.5-6096.8)	<0.001
Robot2 vs Laparoscopy	3683.9(676.4)	(2358.2-5009.6)	<0.001
Robot3 vs Laparoscopy	2996.4(834.7)	(1360.5-4632.4)	<0.001
ROB 1 vs ROB 3	1876.6(824.0)	(261.6-3491.7)	0.023
ROB 2 vs ROB3	916.7(836.8)	(-723.4-2556.8)	0.273

*Adjusted for Age and adjuvant therapy

P151

THE BIMODAL ASSOCIATION BETWEEN PATHOLOGIC COMPLETE RESPONSE AND TUMOR HEIGHT IN LOCALLY ADVANCED RECTAL CANCER PATIENTS UNDERGOING NEOADJUVANT THERAPY.

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Purpose: Neoadjuvant therapy is standard for locally advanced (AJCC stage II and III) rectal cancer. Achieving a pathologic complete response (pCR) has been associated with better prognosis when compared to patients achieving an incomplete response. The objective of this study was to investigate the relationship between distance to the anal verge (DTAV) and pCR.

Methods: Review of a tertiary cancer center's prospectively maintained database identified 827 patients with locally advanced rectal cancer who received neoadjuvant treatment, long-course radiation with concomitant 5-Fluorouracil chemotherapy over 25-28 fractions, during the study period (1998 - 2011). Univariate and multivariate analysis were undertaken to determine association between tumor height from the anal verge (measured pretreatment with proctoscopy) along with other covariates and tumor response to neoadjuvant therapy.

Results: Of the 827 included patients, the median height of the distal aspect of the tumor from the anal verge was 7 cm (IQR 5 - 9 cm). 165 patients (20.0%) had a pCR. DTAV was strongly associated with pCR (P = 0.002): pCR rates were 11.0% for tumors ≤ 4.0 cm, 23.9% for tumors 4.1-6.0 cm, 29.9% for tumors at 6.1-8.0 cm, 16.6% for tumors 8.1 - 10.0 cm (16.6%) and 13.6% for tumors > 10 cm from the anal verge. After adjusting for clinical tumor stage, clinical nodal stage, tumor grade and year of surgery, there continued to be a strong association between DTAV and pCR (P = 0.008). The bimodal distribution of tumor response to neoadjuvant therapy resulted in a lower odds ratio of pCR for tumors ≤ 4cm and >8 cm from the anal verge.

Conclusions: We demonstrate a bimodal distribution of pCR based on DTAV. Patients with low tumors (<4cm) and those with higher tumors (>8 cm), were less likely to have a pCR. Further investigation is warranted to