Conclusions: Our data, though in a limited series, strongly support the conclusion that concomitant chemoradiotherapy of rectal SCC can achieve a complete response in a relevant proportion of patients, avoiding demolitive surgery.

6022 POSTER

Chemoradiation with capecitabine and mitomycin C in preoperative treatment of locally advanced rectal cancer

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Background: Administration of 5 Fluorouracil during preoperative radiotherapy in locally advanced rectal cancer (LARC) is standard treatment. All other new drugs or their combinations have been compared with this therapy in order to reach better results and lower toxicity.
The purpose of our study was to evaluate tolerance and efficacy of preoperative radiotherapy combined with capecitabine plus mitomycin C in patients (pts) with LARC.
Materials and Methods: From October 2006 to April 2008, a prospective study was performed on 46 pts at the Institute for Oncology and Radiology of Serbia. Preoperative radiotherapy was conducted on linear accelerators with tumor dose of 45 Gy in 25 fractions, combined with concomitant chemotherapy Mitomycin C 7 mg/m^2 at 1, 29 day, Capecitabine 825 mg/m^2 bid continuous from 1−37 day. T3 stage was diagnosed in 32 pts and T4 in 14 pts. Positive lymph nodes were noted in 25 pts.
Four to six weeks after radiochemotherapy clinical response rate (cRR) was evaluated by control examinations, rectoscopy and abdominal and pelvic CT and pts were undergone to surgery. NCI-CTC criteria were used for toxicity grading. Regression status was evaluated after operation according to Dworak Tumor Regression Grade (TRG).
Results: Acute complications one or more were diagnosed in 34 pts. The most frequent complication was dermatitis in 26 pts (grade II and III in 21 pts). Skin-foot syndrome was registered in only 3 patients (grade I and II). Diarrhea was reported in 15 pts (grade II and III in 9 pts). Hematological toxicity was noticed in 13 pts (leucopenia grade I and II in **6** pts, anemia grade I in 4 pts and thrombocytopenia grade I in 3 pts).
Clinical complete response was noticed in 10 pts, partial response in 30 and stabile disease in 6 pts. No patient showed disease progression. All patients undergone surgery with R0 resection.
At patohistological findings, the stage distribution was as follows: pT0 (p CR) in 8 pts, pT2 in 9 pts, and pT3 in 25 pts and pT4 in 4 pts. 21 pts had positive lymph nodes. TRG regression rate was: grade IV in 6 pts, grade III in 5 pts, grade II in 19 pts, grade I in 13 pts and grade 0 in 3 pts
The mean follow-up time was 15 months. Out of 46 pts, 5 pts relapsed.
Conclusions: Combined chemotherapy Capecitabine and MMC given concurrently with radiotherapy in preoperative setting is safe and well tolerated with good treatment results and quality of life of treated patients.

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The value of PET-CT during radiochemotherapy in the tumour response prediction for rectal cancer

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Background: To study the role of sequential FDG-PET-CT (PET-CT) imaging during and after pre-operative radiochemotherapy (RCT) as a predictive tool for the treatment response in locally-advanced-rectal-cancer (LARC).
Patients and Methods: Thirty patients diagnosed with LARC, referred for pre-operative RCT, were included in this prospective study. All patients underwent sequential PET-CT imaging at 4 different time points: prior to therapy, at day 8 and 15 during RCT and shortly before surgery. The metabolic response of the tumour, as assessed from the PET-CT data, was correlated with the pathological response based on the tumour-regression-grade (TRG) and the ypT-stage.
Results: Overall, the FDG uptake significantly decreased during pre-operative RCT ($P < 0.001$). Four patients were characterized with an increased FDG uptake peri-tumoural, indicating an inflammatory reaction. Based on the TRG, 13 patients were classified as pathological responders (TRG 1, 2), whereas 17 patients were classified as pathological non-responders (TRG 3−5). The pathological responders showed higher FDG-uptake response-indices (RIs) compared to pathological non-responders. Using ROC-curve analysis, the time-trend of the maximum standardized-uptake-value (SUVmax) provided the best predictor of pathological treatment response. The RI of SUVmax on day 15 of RCT (AUC of 0.87) was found to be superior to the RI on day 8 (AUC of 0.78) or the RI calculated from the pre-surgical PET-CT scan (AUC of 0.66). A cut-off value of 43% for the reduction of SUVmax resulted in a sensitivity of 77% and a specificity of 93%. Excluding the patients presenting with a peritumoral inflammatory response further improved the accuracy of the prediction model to an AUC of 0.97, a sensitivity of 91% and a specificity of 93%.
Conclusion: The SUVmax reduction after the first 2 weeks of RCT provided the best prediction of the pathological treatment response with an AUC of 0.87, suggesting that an accurate prediction of the pathological response is feasible already early during RCT. However, for a few patients an increased FDG uptake due to peritumoral inflammatory reactions was observed, which led to false negative predictions. Nevertheless, the PET-CT scan performed after the first 2 weeks of RCT provides very useful as response predictor and should be further evaluated in future trials aimed at individualizing the treatment of rectal cancer.

6024 POSTER

Does chemotherapy intensity in pre-operative chemoradiation for rectal cancer affect pathologic response?

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Background: To examine the relationship between chemotherapy intensity and outcome and factors affecting tumor response in patients who underwent preoperative chemoradiotherapy for rectal cancer.
Materials and Methods: Medical records of 172 patients who received preoperative chemoradiotherapy followed by radical surgery for clinically staged T3 or 4 rectal cancer from July 2003 to November 2008 were retrospectively reviewed. Radiation dose ranged from 50.4 to 54 Gy. Thirty-four patients were treated with one cycle of bolus 5-FU (group A), 112 with two cycles of bolus 5-FU (group B) and 26 with oral capecitabine (group C). Interval from radiotherapy to surgery was 37 to 92 days (median 58). One hundred fifty eight patients underwent low anterior resection, while 3 patients underwent Hartmann's operation and another 11 underwent abdominoperineal resection.

	No. of pts (%)			
	Group A	Group B	Group C	P value
Pathologic response				
Grade 5	5 (14.7)	22 (19.6)	4 (15.4)	0.750
⩾Grade 4	8 (23.5)	51 (45.5)	11 (42.3)	0.072
⩾Grade 3	20 (58.8)	90 (42.3)	23 (88.5)	0.011
Downstaging				
Yes	23 (67.6)	85 (75.9)	17 (65.4)	0.425
No	11 (32.4)	27 (24.1)	9 (34.6)	
RRM				
⩾2 mm	27 (79.4)	98 (87.5)	20 (76.9)	0.279
<2 mm	7 (20.6)	14 (12.5)	6 (23.1)	
Sphincter saving				
Yes	20 (76.9)	75 (96.2)	22 (91.7)	0.010
No	6 (23.1)	3 (3.8)	2 (8.3)	

Results: The complete pathologic response and overall downstaging rate were 18% and 72.1%, respectively. The pathologic response rate of grade 3 to 5 for group A, group B, and group C were 58.8%, 80.4% and 88.5% (group A vs. group B, $p = 0.011$, group A vs. group C, $p = 0.012$) The rate of sphincter saving surgery was higher in group B compared to group A in tumors located below 5 cm from anal verge (96.2% vs. 76%, $p = 0.003$). Pathologic response rate was correlated with overall downstaging. There was no statistically significant difference in overall downstaging and radial resection margin same or more than 2 mm between three groups. There was no grade 3 to 4 gastrointestinal or hematologic toxicity during treatment in all patients.
Conclusions: Insufficient chemotherapy regimen showed inferior pathologic outcome and lower sphincter salvage rate in low lying tumor without