

(15.3%). All patients where chemotherapy treated plus surgery, except for 38 patients (9.4%) who received best supportive care because of poor performance status (6 patients were ≤ 40 years).

Conclusion: More than fifty percent of patients were diagnosed to have distal cancers. We found a large proportion (67%) of patients presented in advanced stages (III/IV), even in young people (≤ 40 years). We show evidence about that increasing prevalence of CRC in young patients (22.8%). About colonic tumour location was interesting that 21.8% of cases were PC. These findings have important implications for CRC screening strategies, preventive and early detection programs in Mexico.

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POSTER

Ultra Low Anterior Resection for Distal Rectal Cancer – the End of the 1CM Rule?

W. Ceelen¹, Y. Van Nieuwenhove¹, D. Vande Putte¹, P.J. Elshout¹, P. Pattyn¹. ¹UZ University Hospital Gent, Surgery, Gent, Belgium

Introduction: Controversy persists concerning the oncological safety of very close distal margins in patients with low (≤ 5 cm) rectal cancer treated with neoadjuvant chemoradiation (nCRT).

Methods: All patients with low rectal cancer treated with nCRT (45 Gy) followed by sphincter saving surgery were identified from a prospective database. We analysed pathological and surgical outcome including local recurrence rate. Also, we studied the influence of distal margin (>1 cm versus ≤ 1 cm) on overall survival using log rank analysis. Data are expressed as mean \pm SD or median (range).

Results: From 1998 until 2010, 109 patients (73% male) were identified. Clinically, 59% were staged as node positive. The pre-CRT distance from the anal verge was 3 cm (0.3–6). All patients underwent ultra low anterior resection; 35% underwent intersphincteric resection and colo-anal anastomosis. A protective ileostomy was constructed in 90% of patients. Stage distribution was as follows: stage 0 (ypCR): 16%, stage I, 30%, stage II, 21% and stage III, 19%. The median distal margin was 10 mm (0.1–40 mm). After a median follow up of 33 months, isolated local recurrence developed in 2 patients (1.8%) one of whom underwent successful surgical salvage. Two patients (1.8%) developed local and distant recurrence, while metastatic disease only developed in 25 patients (23%). Overall 5 year survival was 70%, and did not differ between a distal margin >1 cm versus ≤ 1 cm ($P=0.18$, log rank).

Conclusions: In patients with low rectal cancer undergoing nCRT, a distal margin <1 cm does not compromise local control or survival.

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POSTER

Hypoxic Antiblastic Stop-flow Pelvic Perfusion – a Step in the Therapeutic Flow-chart of Recurrent Colorectal Cancer

A. Ferro¹, P. Pilati¹, D. Miotto², E. Tessari¹, E. Mammano¹, D. Nitti¹. ¹Clinica Chirurgica II – Padova, Department of Surgical and Oncological Sciences, Padova, Italy; ²Radiology Institute, University of Padova, Padova, Italy

Background: Hypoxic antiblastic stop-flow perfusion (SFP) is a palliative locoregional treatment for patients with locally advanced inoperable tumours, based on the perfusion of the tumour's anatomic district after blood supply blockage achieved by means of intravascular inflatable balloon catheters.

Material and Methods: 26 patients affected by locally recurrent unresectable colorectal cancer were treated with a total of 43 pelvic SFP. All patients had received other previous treatments: surgery (26), systemic CT (23), RT (24), a previous pelvic SFP (11), two previous pelvic SFP (5) and previous three (1). Drugs delivered were a combination of Oxaliplatin and Mitomycin-C. Systemic and locoregional toxicity, tumour response, local progression-free survival and pain control rates were recorded. In cases of partial response or stable disease following the first SFP, a second or further procedures were taken into consideration if no distant metastases were found.

Results: A single SFP was performed in 32 patients; 6, 4 and 1 patient underwent respectively 2, 3 and 4 cycles of SFPs. The mean interval between repeated SFPs was 8 weeks (range 6–10 weeks). The mean hospital stay was 5 days (range 3–23 days).

No postoperative deaths occurred. Four methodical complications were recorded: 2 bleedings from the puncture site, 1 haematoma, 1 deep venous thrombosis and 1 artero-venous fistula. Mild locoregional and systemic toxicity were observed after 5 (12%) and 6 (14%) treatments. The mean drug leakage rate was 54%. Complete and partial response was observed in 2 (8%) and 8 (31%) patients, respectively (overall response rate = 39%). In these patients surgery was reconsidered. In 9 patients (35%) stabilization of disease was observed after one treatment. Median local progression free survival was 7 months (range 2–23 months). Median overall survival was 15 months: the higher the number of SFPs pursued per patient, the

higher the overall survival. A high rate of pain control was achieved: 60% of patients decreased the dosages of pain-relievers, 40% didn't use drugs anymore.

Conclusions: SFP is a semi-invasive procedure that shows encouraging results not only in terms of cancer related symptoms palliation, but surprisingly in terms of tumour response rates. Therefore indications to SFP should be extended as an alternative to the failure of traditional approaches and as a neo-adjuvant treatment to make surgical resection feasible.

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POSTER

Characteristics of Individuals With High Scores in the Model PREMM_{1,2} Risk Assessment of Germline Mutations in MLH1 and MSH2

C. Guillen-Ponce¹, M.J. Molina-Garrido², M. Goicoechea³, D. Salas³, A. Carrato¹. ¹Hospital Ramón y Cajal, Medical Oncology, Madrid, Spain; ²Hospital Virgen de la Luz, Medical Oncology, Cuenca, Spain; ³Dirección de Salud Pública, Oficina del Plan del Cáncer, Valencia, Spain

Introduction: Lynch syndrome is the most common inherited cause of colorectal cancer and is due to germline mutations in mismatch repair of errors of DNA base pairing (MMR genes). Most mutations occur in genes MLH1 and MSH2. The PREMM_{1,2} model predicts the likelihood of being a carrier of a mutation in the genes MLH1 and MSH2 based on personal and family history of colorectal cancer and adenomas.

Material and Methods: From 2005–2008 124 genetic studies were carried out on patients with suspected Lynch syndrome; in 87 cases MLH1 and MSH2 were analyzed. Of these patients 20 were carriers of a MLH1 mutation (6) or MSH2 (14). Retrospectively, the PREMM_{1,2} predictive model was applied to all individuals. We analyzed the sensitivity and specificity for different cutoff points. In individuals with higher PREMM_{1,2} scores ($\geq 20\%$) personal clinical characteristics (sex, age at cancer diagnosis, tumour type, location, multiple tumours, presence of adenomas) and family (age of first cancer in the family, presence or absence of first-and second-degree relative with colorectal cancer and endometrial cancer) and diagnostic criteria (Amsterdam or Bethesda modified) were evaluated. Individuals with PREMM_{1,2} $\geq 20\%$ were stratified according to whether or not they had MMR deficiency (microsatellite instability [MSI] or loss of expression by immunohistochemistry [IHC] of MMR proteins).

Results: 20 pathogenic mutations (22.98%) were detected: 6 of gene MLH1 and 14 MSH2. The cutoff of PREMM_{1,2} influenced the ability to discriminate between carriers and non-carriers of mutation: for a cutoff of $\geq 5\%$ the sensitivity was 100% and specificity of 14.9% and mean positive predictive (PPV) of 25.9%; for a cutoff of $\geq 20\%$ the sensitivity fell to 71.64% while the specificity increased to 45%, and PPV was 32.14%. There were 28 individuals who scored $\geq 20\%$. In 27 of these the MMR status was known. There were no differences in any personal or familial clinical features among the 16 patients with MMR deficiency and 11 without MMR deficiency, except in the type of cancer: all individuals who scored $\geq 20\%$ and did not have MMR deficit were suffering from colorectal cancer, whereas in the MMR-deficient group there were 6 individuals with extracolonic tumours (5 endometrial cancers and 1 stomach cancer) ($p=0.046$).

Conclusions: The discriminative capacity of the PREMM_{1,2} model varies according to different cutoff points. The PREMM_{1,2} score in combination with MMR status identifies a subset of patients who differ in the type of tumour present. Colorectal cancer is the only type of tumour diagnosed in individuals with PREMM_{1,2} $\geq 20\%$ with tumours without MMR deficiency.

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POSTER

Non-specialist Decision Making in the Management of Metastatic Colorectal Cancer

R. Jones¹, S. Fenwick¹, G. Poston¹, D. Berry², D. Dunne¹, H. Malik¹.

¹University Hospital Aintree NHS Foundation Trust, Department of Hepatobiliary Surgery, Liverpool, United Kingdom; ²University of Leicester, Department of Hepatobiliary Surgery, Leicester, United Kingdom

Background: Improved surgical techniques and chemotherapeutic regimens have meant that the definition of resectable metastatic liver disease is evolving. UK NICE guidance 176 implies that all patients with liver-only metastatic colorectal cancer should have their treatment managed by an MDT with access to specialist liver surgeons.

This study aimed to assess local colorectal MDT decision-making on resectability of liver-only metastatic colorectal cancer.

Methods: All patients treated with palliative chemotherapy between January and December 2009 at a regional oncology unit for metastatic colorectal cancer were identified using a prospectively maintained database. This was then cross-referenced with the regional hepatobiliary multidisciplinary database, to identify patients who had been discussed with a liver surgeon. Imaging for all patients who had not been reviewed by a liver surgeon was retrieved. Patients with disseminated malignancy were excluded, leaving a cohort of patients with liver only metastatic

disease who had not received formal liver surgical review. Imaging for these patients was assessed by 4 specialist liver surgeons working at 2 different units. Disease was classified as resectable, potentially resectable after neoadjuvant chemotherapy, irresectable and unlikely ever to become resectable, or unable to assess based on current imaging. A majority decision on an appropriate management was then taken.

Results: Between Jan-Dec 2009, 110 patients were treated with palliative chemotherapy at a regional oncology unit for metastatic colorectal disease. 37 patients had been discussed at the supraregional hepatobiliary MDT prior to commencing chemotherapy, and were excluded.

CT reports for the initial staging scan were reviewed in the remaining 73 patients. 20 had widespread metastatic disease, and were excluded. The initial imaging for the remaining 53 patients with liver-only metastatic colorectal cancer was reviewed. 14 patients (25%) had resectable disease at presentation, 26 patients (47%) had borderline resectable disease and it was felt would benefit from downstaging chemotherapy and reassessment, whilst 13 patients (24%) were irresectable at presentation.

Conclusions: Non-expert decisions on resectability are leading to inappropriate patient management, with potentially curable patients being referred for palliative treatment. Specialist liver surgery review is essential for all patients with liver only metastatic disease.

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POSTER

Preoperative Chemoradiotherapy Improves Local Recurrence Free Survival in Locally Advanced Rectal Cancer

D. Turhal¹, M.A. Ozturk¹, O. Yildiz¹, F. Selcukbiricik¹, O. Elicin², S. Erguney³, M. Ozguroglu¹. ¹Istanbul University Cerrahpasa School of Medicine, Medical Oncology, Istanbul, Turkey; ²Istanbul University Cerrahpasa School of Medicine, Radiation Oncology, Istanbul, Turkey; ³Istanbul University Cerrahpasa School of Medicine, General Surgery, Istanbul, Turkey

Background: Preoperative chemoradiotherapy (preCRT) followed by total mesorectal excision (TME) is the recommended therapy for patients with locally advanced rectal cancer (LARC). The aim of this study was to compare the rates of local and distant recurrence and overall survival rates of patients who received preCRT versus postCRT.

Methods: Data of patients with clinical stage T3/4 N0/+ rectal cancer who received either preCRT or postCRT, and followed up at our center between 2000–2009 were retrospectively analyzed. Preoperative staging were performed with computed tomographic (CT) scanning of thorax and CT or magnetic resonance imaging (MRI) of the abdomen and pelvis, and in some cases endorectal ultrasonography. PreCRT regimen was administered as continuous infusion of 5-FU during the 6-week radiotherapy (RT) course PostCRT regimen was administered as six cycles of bolus FU five times weekly and concomitantly with RT at the 3rd and 4th cycles. Patient characteristics, type of surgery, time to surgery after completion of preCRT, distance of tumour from the anal verge, clinical (c) T and N stages, pathological (p) T and N stages, presence of pathological complete response (pCR), time to adjuvant treatment after completion of surgery, disease recurrences (local or distant), and deaths with any cause were determined. Categorical and continuous variables were compared with chi-square and Mann-Whitney U tests, respectively. Local recurrence free survival (LRFS) and distant recurrence free survival (DRFS) were defined as the time from the diagnosis to the detection of any local or distant recurrence, respectively. Overall survival (OS) was defined as the time of diagnosis to death of any cause. LRFS, DRFS, and OS were estimated by using the Kaplan–Meier method. Log-rank test was used to evaluate any difference between groups.

Results: PreCRT group had more cT4 or node positive disease. The median distance of tumour from the anal verge was 8 cm. Overall, 35% of tumours were within ≤5 cm distance from the anal verge (preCRT group; 50%, postCRT group; 28%). Final surgery type was not influenced by the administration of preCRT in tumours ≤5 cm distant from the anal verge ($p=0.3$). A pCR was achieved in 20% of the patients in preCRT group. LRFS at 5-yr was 83.2% in preCRT and 67.8% in postCRT groups ($p=0.04$). DRFS at 5-yr was 71% in preCRT and 59% in postCRT groups ($p=0.1$). 5-yr OS rates were 70% for preCRT & 62.6% for postCRT group ($p=0.9$).

Table 1.

	preCRT	postCRT	p value
cT3, n (%)	40 (80)	75 (80)	0.6
cT4, n (%)	9 (18)	6 (6)	0.02
unknown, n (%)	1 (2)	13 (14)	0.01
cNpositive, n (%)	27 (54)	26 (28)	0.01
Low anterior resection, n (%)	31 (62)	69 (73)	0.1
Abdominoperineal resection, n (%)	19 (38)	25 (27)	0.1

Table 2.

	preCCRT	postCCRT	p value
pT2, n (%)	6 (12)	6 (6)	0.2
pT3, n (%)	27 (54)	79 (84)	0.01
pT4, n (%)	7 (14)	9 (10)	0.6
pCR, n (%)	10 (20)	NA	–
pN positive, n (%)	17 (34)	60 (64)	0.01

Conclusion: Treatment of LARC with preCRT followed by TME as compared with TME followed by postCRT improved LRFS but did not improve DRFS or OS in our patient cohort.

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POSTER

Transanal Endoscopic Microsurgery (TEM) After (Chemo)Radiation Therapy for Distal Rectal Cancer

G.M.J. Bökkerink¹, I.H.J.T. de Hingh², H.J.T. Rutten², E.J.R. de Graaf³, P.G. Doornebosch³, C. Verhoef⁴, A.H.W. van de Ven⁵, P.J. Tanis⁶, J.H.W. de Wilt¹. ¹Radboud University Nijmegen Medical Centre, Surgical Oncology, Nijmegen, The Netherlands; ²Catherina Hospital, Surgery, Eindhoven, The Netherlands; ³IJsselland Hospital, Surgery, Capelle aan de IJssel, The Netherlands; ⁴Erasmus Medical Centre, Surgical Oncology, Rotterdam, The Netherlands; ⁵Flevo Hospital, Surgery, Almere, The Netherlands; ⁶Academic Medical Centre University of Amsterdam, Surgery, Amsterdam, The Netherlands

Background: Standard treatment of distal rectal cancer is chemoradiation therapy (CRT) or short course radiotherapy (SRT, 5 × 5 Gy) followed by total mesorectal excision (TME). Multimodal treatment using CRT followed by local excision (LE) is increasingly used in patients with distal rectal cancer because of the postoperative risks and problems after TME. Clinical randomised trials are lacking, but several authors describe good oncological and functional results. The aim of the study was to evaluate the multicenter results of CRT and SRT followed by LE using transanal endoscopic microsurgery (TEM) in the Netherlands.

Patients and Methods: All patients treated with CRT and SRT and LE in 3 specialised TEM centres in the Netherlands were evaluated. All patient, tumour and therapy related factors were identified from the prospective databases and medical records at the three centers.

Results: Thirty-eight patients, 18 male and 20 female, were eligible for analysis. Eight patients had a clinical T1, 16 a T2, 9 a T3, 3 a T4 tumour, clinical T stage was unknown in 2 patients. SRT was given to 23 patients and in 10 of these patients (group 1) the interval between SRT and LE was 1 week maximum (range 2–6 days). In 13 patients (group 2) the interval was more than 6 weeks (range 42–120 days). CRT (43.2–50.4 Gy + 5-FU) was performed in 13 patients (group 3) and 2 patients (group 4) underwent a different radiotherapy schedule (13 × 3 Gy). ypT-stadia were ypT0 (n = 11), ypTis (n = 1), ypT1 (n = 7), ypT2 (n = 10) and ypT3 (n = 9). Pathological complete responses (pCR) were identified in the groups treated by CRT (n = 6) and SRT followed by an interval of at least 6 weeks (n = 5).

Six patients underwent additional TME because of ypT2 (n = 1) or ypT3 (n = 5) stage in the resection specimen after LE. Postoperative wound dehiscence occurred in 13 patients (34%). There was no statistically significant difference in the 4 groups (i.e. 23, 30, 46 and 50%). In one patient the wound dehiscence was treated with a temporary ileostomy and all others did not need surgical intervention. Two local recurrences were observed in patients with ypT3 and ypT2 tumours in the excision specimen, both patients refused proposed immediate additional TME after LE.

Conclusions: Our study confirms that postoperative outcome in patients with a (near) pCR after CRT and SRT seems to be good, but complication rates are high. Prospective trials are needed to determine response rate, morbidity and long-term outcome after this promising multimodality strategy.

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POSTER

Pulmonary Metastectomy for Colorectal Cancer – a Retrospective Review

K. Stephenson¹, V. Potter¹. ¹Nottingham City Hospital, The Cancer Centre, Nottingham, United Kingdom

Background: Colorectal cancer is the third most common cancer in the UK. 20% of patients will develop lung metastases. The role of pulmonary metastectomy in these patients remains controversial. Without treatment survival is estimated to be 8 months, but even with advances in chemotherapy 5 year survival in the context of metastatic disease remains only 5%.