There have been no randomised controlled studies investigating the value of pulmonary metastatectomy and a recent systematic review was unable to draw inferences. The optimal management of this patient group remains unclear.
Methods: A retrospective review of cases presenting with lung metastases from a colorectal primary and treated in a single centre by pulmonary resection, between the years 1991 and 2009, was performed.
Results: 76 patients were identified. The average age at resection was 61 years. 66% of patients were male, 34% female.
29 patients initially presented with Dukes C1 cancers, only 7 presented with synchronous metastases. Prior to lung resection 12 of the patients had undergone liver resection. 13 patients underwent more than one lung resection, with 10 patients undergoing 2 metastatectomies and 3 patients having 3 resections in total.
The median time from diagnosis of the colorectal primary to lung resection was 36 months. Five year survival from diagnosis of the primary cancer was 70%. Following diagnosis of lung metastases and metastatectomy, two year survival was 82% and 5 year survival was 30%.
Following lung resection 20% of patients received adjuvant chemotherapy. 29% of patients in the series received chemotherapy in the palliative setting following lung resection. i.e. on disease progression following metastectomy.
Conclusions: Our retrospective review has shown an improvement in five year survival in patients who underwent pulmonary resection compared to that expected from palliative chemotherapy. Whilst the evidence from this population is clearly in favour of surgery a randomised control trial needs to be carried out to provide more robust evidence. Lung resection is associated with a 2−4% risk of mortality depending on the procedure undertaken. For this reason prognostic indicators would need to be examined to help design a comprehensive referral guide for patients presenting with pulmonary metastases to ensure that only patients who would clearly benefit from metastatectomy undergo surgery.

6040 POSTER

Liver Only Metastatic Disease in Patients With Metastatic Colorectal Cancer (mCRC), Impact of Surgery and Chemotherapy

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Background: Metastatectomy in colorectal cancer is now a standard of care where resection is thought to offer a chance of cure. Conversion chemotherapy has increased the population who are suitable for surgery.
Methods: We analysed the outcomes for patients with liver only metastatic involvement from the SA Metastatic Colorectal Cancer Database with aim to assess impact of chemotherapy on liver resection & outcome in comparison to liver resection only. Patients who had no therapy or non surgical liver interventions were excluded for this analysis.
Results: Of 1908 patients with met CRC, 687 (36%) have liver only disease. Of these 69.3% had chemotherapy only, 10.8% had liver surgery alone and 19.9% both chemotherapy & surgery. Patient characteristics are shown in the table.

Total pts (n = 685)	Resection (R) only n = 77**	Chemotherapy (C) n = 476	Resection and chemotherapy (RC) n = 132**
Male	55 (71.4%)	274 (57.6%)	88 (66.7%)
Female	22 (28.6%)	202 (42.2%)	44 (33.3%)
Median Age (yrs)	72.4 (32.8–92.9)	75.2 (25.6–99.0)	66.8 (35.6–86.4)
Rectal	21 (27.3%)	88 (18.5%)	89 (67.4%)
Synchronous*	26 (33.8%)	385 (80.9%)	89 (67.4%)
Metachronous*	51 (66.2%)	91 (19.1%)	43 (32.6%)
Histological grade:			
Well differentiated	2 (2.6%)	7 (1.5%)	1 (0.8%)
Moderately differentiated	66 (85.7%)	283 (59.5%)	109 (82.6%)
Poorly differentiated	8 (10.4%)	93 (19.5%)	18 (13.6%)
Undifferentiated/Anaplastic	0	1 (0.2%)	0
Not determined/Not stated	1 (1.3%)	92 (19.3%)	4 (3.0%)
Kras: mutant	1	10	8
Kras: wild type	0	26	2
Median OS (months)	45.6	11	Not reached

*2 unknown stage at diagnosis. **8 liver resection surgeries abandoned.

In RC group 33.3% (44/132) patients received chemotherapy preoperatively, 37.2% (49/132) post operatively and 29.5% (39/132) peri-operatively. Oxaliplatin based doublet chemotherapy was most common chemotherapy used in all 3 subgroups − 91% (40/44), 73.4% (36/49) & 87% (34/39) respectively. In peri-operative group who commenced FOLFOX, 41% (14/34) changed chemotherapy regimen post operatively. For R & RC resections details are as follows; R0 66% (51/77) & 76% (100/132) and R1 7.8% (6/77) & 6% (8/132) respectively. For R 19 of 77 have relapsed and 14 had chemotherapy (FOLFOX 6, Capecitabine 5 & FOLFIRI 3), 4 had re-resection & 1 both re-resection & chemotherapy. In RC 32 of 132 have had recurrence. 17 had further chemotherapy, 7 had re-resection and 8 had both. The 1, 2 and 3 year survivals are R 94.4%, 84.3%, 73.3%, C 47.7%, 27.9%, 9.15%, RC 98.5%, 88.9%, 73.8%.
Conclusions: Liver only metastatic disease is common in colorectal cancer and patients undergoing liver resection have improved long term survival. Survival appears greatest if there is a combined approach of chemotherapy and hepatic resection Patients undergoing resection alone are older, more likely to have synchronous disease and have a colon primary. Patients not suitable for surgery with liver only disease appear to have a poor prognosis.

6041 POSTER

Mutation Pattern of KRas and BRAF Oncogenes and Their Comparison With Clinicopathological Features in Patients With Colorectal Cancer

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Background: Activating missense mutations of *KRAS* and *BRAF* genes have been implicated in colorectal carcinogenesis. The aim was to identify incidence of *KRAS* and *BRAF* gene mutations among Croatian examinees diagnosed with colorectal cancer (CRC) and to assess whether they are linked with clinicopathological features.
Material and Methods: Tumour DNA was isolated from formalin-fixed paraffin-embedded primary tumour tissue blocks. *KRAS* mutations were evaluated using quantitative real-time PCR (exon 2, codons 12 and 13) and *BRAF* mutations (exon 15) were analyzed using real-time PCR by fluorescence melting curve analysis in 54 patients (23 females and 34 males).
Results: *KRAS* gene mutations are detected in 18 samples (33.3%). There were 10 transversions (G > T) and 8 transitions (G > A) out of which sixteen mutations affected codon 12 and two affected codon 13. The most frequent *KRAS* mutation is Gly12Val (GGT > GTT) detected in 9 samples (50%). Five patients had Gly12Asp (GGT > GAT) mutation, two patients Gly13Asp (GGC > GAC), while of the remaining two patients one had Gly12Ser (GGT > AGT) and the other one had Gly12Cys (GGT > TGT). Consistent with literature reports, the majority of *KRAS* mutations were found in codon 12, with smaller number of nucleotide substitutions in codon 13. The majority of mutations were base-pair transversions. Statistical analysis revealed significant association (p = 0.04) between *KRAS* mutation and Dukes' stage with least frequency in Dukes'A. We found no correlation between mutations and other clinicopathological features. *BRAF* gene mutation Val600Glu was detected in 4 samples (7.4%). All mutations were detected in males in tumours classified as Dukes'C. Three out of four *BRAF* positive samples (75%) were well to moderate differentiated tumours bigger than 5 cm. We found no correlation between *BRAF* mutations and clinicopathological features.
Conclusions: The data about *KRAS* and *BRAF* mutational status shows that the incidence of *KRAS* and *BRAF* mutations is within generally valid limits. Prospective studies are to be continued in order to determine whether these mutations play a role in the progression of CRC. Because current treatments for patients with CRC include several targeted monoclonal antibodies, the data shall also be correlated with the survival rate. The final result must be a proper selection of the correct therapy which is critical for improving clinical outcomes, unnecessary toxicities, and financial cost.

6042 POSTER

Is More Psychosexual Guidance Warranted During and After the Treatment for Rectal Cancer? − a Pilot Study

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Background: To compare patients with Locally Advanced Rectal Cancer (LARC) with patients treated with Total Mesorectal Excision (TME) with regard to: (i) the prevalence of erectile dysfunction, ejaculation problems, dry vagina, and dyspareunia; (ii) whether aids are used to enhance erectile function and improve lubrication; and (iii) sexual functioning and sexual enjoyment.
Material and Methods: Patients treated for LARC (n = 263, of which 164 men) and patients treated with TME (n = 63, of which 42 men)

were studied. Multimodality treatment consisted of preoperative (chemo) radiotherapy, intended radical surgery, and intraoperative radiotherapy (LARC group only). Patients completed the EORTC QLQ-CR38 subscales sexual functioning and sexual enjoyment. Furthermore, men reported if they used aids to enhance erectile functioning and women reported if they used aids to improve lubrication.
Results: In both groups, <50% of men and women were sexually active. For men and women a high prevalence of sexual dysfunction was found in both groups (>75% except for dyspareunia), however, <20% of patients used aids to enhance erectile function or lubrication (see Table 1). No significant differences were found between both groups on sexual functioning (22.1 and 27.6) and sexual enjoyment (40.3 and 45.0, respectively).
Conclusions: Although a high prevalence of sexual dysfunction was reported, few patients used aids to reduce these problems. No differences between the LARC and TME groups were found. Future research should investigate whether more information provision and/or psychosexual counseling during and after treatment is warranted. More psychosexual guidance may give license to couples to discuss sexual problems and to search for adequate professional support.

Table 1. Sexual problems in men and women

	LARC	TME	P-value
Men	**(n = 164)**	**(n = 42)**	
Sexually active	77 (47%)	18 (43%)	0.635
Erectile functioning			0.741
No problems	15 (25%)	3 (23%)	
Problems to some extent	46 (75%)	10 (77%)	
Aids used to enhance erectile functioning			0.811
No	54 (87%)	11 (85%)	
Yes	8 (13%)	2 (15%)	
Ejaculation problems			0.866
No problems	13 (21%)	3 (23%)	
Problems *(some–very much)*	49 (79%)	10 (77%)	
Women	**(n = 99)**	**(n = 21)**	
Sexually active	34 (34%)	10 (48%)	0.866
Dry vagina			
No problems	0 (0%)	0 (0%)	NA
Problems to some extent	17 (100%)	5 (100%)	
Aids used to improve lubrication			0.880
No	20 (83%)	6 (86%)	
Yes	4 (17%)	1 (14%)	
Dyspareunia			
No problems	16 (60%)	3 (50%)	.369
Problems *(some–very much)*	7 (30%)	3 (50%)	

NA= not applicable.

6043 POSTER

Multidisciplinary Approach and Novel Trans-anal Abdominally Assisted Pull Through Technique for Low Rectal Cancer

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Background: Rectal cancer accounts for the largest distribution within one anatomical region of the large bowel, with approximately one third of all CRC located within the rectum. The gold standard treatment of primary rectal cancer is curative surgical resection; however, a fine balance remains between disease cure and restoration of gastrointestinal continuity. Combined modality has proven efficacy in many malignant tumours with advantage of organ preservation. In this study we use novel technique of trans-anal abdominally assisted pull through operation in treatment of low rectal cancer.
Patients and Methods: One hundred fifty four (154) patients with rectal carcinoma were included in a prospective study, between Jan. 2007 and Jan. 2011. Threaten (13) patient excluded from the study during surgical intervention (disseminated malignancy). Seventeen (17) patients with low rectal cancer receive preoperative chemo radiation and subjected for new technique of coloanal pull through technique.
Results: One hundred forty-one (141) patients were included in the study. 78 (55%) patients were male and 63 (45%) were female, the age range from 11 years to 85 years with the mean age 45.7 years. The main presenting symptoms were bleeding per rectum and Tenesmus. Stage I 13 patients (9%), stage II 50 patients (35%), Stage III 63 patients (45%), and stage IV 15 patients (11%). Neoadjuvant chemoradiation was administrated in 49 patients with locally advanced tumours with; Complete clinical and pathological response in 3 patients (6%), complete clinical response in 11 patients (22%), partial response in 27 patients (55%), no significant response in 8 patients (16%). Abdominoperineal resection was done in 81 patients (57.5%), anterior resection was done in 20 patients (14.5%), low anterior resection in 15 patients (10.5%), Hartman's procedure in 8 patients (5.5%) and coloanal pull through was done in 17 patients (12%). For patients with coloanal pullthrough technique complete dehiscent and retraction in one case, major leakage in one case, stenosis in 4 cases. Functional outcome: see table 1. Recurrence in one case.

Table 1. Functional outcome

Types of continence	CAP (17)	LAR (15)
Continence for solid & liquid stool & flatus	10 (59%)	12 (80%)
Continence for solid stool & occasional incontinence for liquid stool	5 (29.4%)	1 (6.6%)
Soiling at night	1 (5.8%)	1 (6.6%)
Frequent episodes of incontinence for liquid stool	1 (5.8%)	1 (6.6%)
Total	17 (100%)	15 (100%)

Conclusion: There is tendency of colorectal cancers to affect younger groups. Most patients presented in advanced stage due to lack of awareness Coloanal Neoadjuvant chemo-radiation is excellent tool in sphincter saving surgery. pullthrough operation is novel technique for very low rectal cancer with good oncological safety and functional outcome.

6044 POSTER

Preoperative Radiotherapy, Capecitabine and Cetuximab for Locally Advanced Rectal Cancer − Long Term Results of the XERT Phase II Trial

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Background: This study evaluated the impact of addition of cetuximab to concurrent capecitabine based chemoradiotherapy (CRT) in locally advanced resectable rectal cancer (LARC)on pathological complete response (pCR) as primary endpoint and on local control and survival parameters as secondary endpoints.
Methods and Materials: Patients (pts) with stage II/III rectal cancer, confirmed by magnetic resonance imaging, were included in the study. Pts received capecitabine 1250 mg/m^2 twice daily for 2 weeks, followed by cetuximab 400 mg/m^2 IV at week 3, then cetuximab 250 mg/m^2 IV/week and capecitabine 825 mg/m^2 twice daily (including weekends during RT). An RT dose of 45 Gy (25 × 1.8 Gy, 3D conformal technique) was administered from week 4 onwards for 5 weeks. Total mesorectal excision was scheduled 4−6 weeks after CRT completion. Surgical specimens were evaluated using the "Dworak" tumour regression grading (TRG) system.
Results: A total of 36 pts were eligible for the efficacy analysis: median age was 55 (range: 33−72) years and 81% were male. The most frequent MRI staging was uT3N+ (75%). All pts received 45 Gy and underwent surgery. A pCR (TRG 4) was reported in 3 pts (8%), TRG 3 in 7 pts (19%), TRG 2 in 18 pts (50%), TRG 1 in 8 pts (22%) and TRG 0 in 1 pt (3%). The most common grade 3 toxic effects were dermatitis (n = 6), diarrhea (n = 4), hypersensitivity reaction (n = 2), hepatotoxicity, infection and anorexia (each n = 1). Thirteen pts experienced non-fatal perioperative complications, most frequently wound healing problems (n = 6). Three pts required reoperation due to anastomotic leakage, abdominal abscess and incarceration of transversostoma. Thirty-three pts (93%) received postoperative chemotherapy. Median follow-up was 36 months (5−84 months). No pts were lost during follow-up. The 3-year overall survival, disease-free survival, and local control rates were 72%, 71% and 97%, respectively. Thirteen of 32 tumours had KRAS mutations. There was no apparent survival difference between pts with KRAS-mutations versus wild type nor a correlation with the TRG.
Conclusions: Adding cetuximab to capecitabine-based chemoradiation prior to surgery is a tolerable treatment for LARC. Our data suggest that KRAS mutation status is not a predictor of tumour response in LARC treated with preoperative chemoradiation. Promising survival rates and excellent local control calls for further investigations in a larger patient population.