Background: Sentinel lymph node biopsy (SLNB) in melanoma is currently performed using pre-operative lymphoscintigraphy and dual technique (radioisotope and blue dye). The novel magnetic technique is non-radioactive and provides both a colour change (brown/black) in the sentinel lymph node (SLN) and can be detected intra-operatively using a hand-held magnetometer. The MELAMAG Multicentre Trial (UKCRN ID:14011), a phase II international trial, compared the magnetic technique with the standard dual technique.

Materials and methods: Patients with primary cutaneous melanoma scheduled for SLNB and who were clinically AJCC stages IB-IIC, were recruited from 4 centres in the United Kingdom and the Netherlands. Surgeons at each site were trained in the magnetic technique prior to operating independently. We defined this trial with 80% power, a 5% one-sided significance and a proportion discordance of 0.052. The trial assumed a 97% identification rate with a limit difference for equivalence of -5%. SLNB procedures were performed after administration of radioisotope (followed by a lymphoscintigram), magnetic tracer (Sienna+, Endomagnetics Ltd.) and blue dye (Patent V Blue, Guerbet, France). The surgeon initially used a magnetometer (SentiMag, Endomagnetics Ltd.) to localize the SLN(s) followed by a gamma probe for confirmation. SLN identification rate per patient, with the two techniques, was compared.

Results: A total of 133 patients were recruited and 129 patients were available for final analysis (4 excluded). In these patients, 166 SLNB procedures were undertaken and 257 nodes were excised. The sentinel node identification rate was 97.7% (126/129) with the standard technique and 95.3% (123/129) with the magnetic technique (2.3% difference; 95% upper confidence limit 6.4%; 5.4% discordance). With radioisotope alone the SLN identification rate was 95.3% (123/129) and compared favourably with the magnetic technique (0.0% difference; 95% upper confidence limit 4.5%; 7.8% discordance). The lymph node retrieval rate was 1.99 nodes per patient overall, 1.78 with the standard technique and 1.88 with the magnetic technique.

Conclusion: The magnetic technique is feasible for SLNB in melanoma with a high SLN identification rate and is non-inferior to the radioisotope alone. Pre-operative lymphoscintigraphy is still required and further research into a non-radioactive alternative, is needed.

No conflict of interest.

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Background: Ocular melanoma (OM) is a rare and aggressive cancer that frequently metastasises to the liver in a diffuse and inoperable pattern, but without extra-hepatic spread. It is resistant to systemic chemotherapy and median survival is 4-6 months. PHP has been reported to prolong hepatic progression free survival in metastatic OM.

Aim: This study reviews experience in a single UK centre using PHP to treat patients with inoperable, hepatic OM metastases.

Results: From June 2012 to June 2014, 15 patients were selected for PHP by the metastatic OM MDT. 25 treatments were completed in 14 patients, (median 2, range 1-3), 1 patient was not possible to treat due to distorted anatomy and died of disease progression within 2 months.

8 Male: 6 Female. Median age 51 years range 27-68

There was no procedure related mortality.

Four patients had complications: 1 reversible cardiac ischaemia, 1 ar- rythmia, 1 neutropenia requiring GCSF, 1 access site haemorrhage. Median length of stay was 3 days (range 1-5). Median procedure time was 168 minutes (range 135 to 246).

Median follow up after first PHP treatment was 8 months (range 1-22), 11/14 patients had a radiological response by RECIST criteria, including 2 patients with a complete response.

Two patients had early progression (1 hepatic, 1 extrahepatic) and died (4 and 9 months respectively) after a single treatment. 4 patients are alive with progressive disease; 2 extra-hepatic (22 and 18 months) and 2 hepatic (7 and 8 months).

8 patients have a sustained response (median 7 months, range 2-19).

Conclusion: PHP can be performed safely in carefully selected patients and achieves good response rates in patients with inoperable ocular melanoma liver metastases. Further follow up is required to quantify the long term survival benefit.

Conflict of interest: Other substantive relationships: Pearce, Stedman and Fennell have had travel, accommodation and meal expenses paid by Delcath on 4 occasions in the last year as sponsorship whilst attending clinical or scientific meetings.

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surgery for colorectal liver metastases is increasing, because neoadjuvant chemotherapy has brought a greater number of patients to resection. A knowledge of the biological phenotype of colorectal liver metastases would be invaluable in informing clinical decision making; however, deriving this information from the metastatic lesions is not feasible until after resection. By contrast, material from the primary tumour is routinely available. We aimed to establish the feasibility of using biological information from a primary colorectal tumour to inform and predict response to neoadjuvant chemotherapy for liver metastases.

Methods: Fresh tissue from both primary colorectal tumour and liver metastases, and from normal colonic mucosa and liver parenchyma, were acquired at the time of resection in 17 patients and subjected to comparative proteomic analysis using isobaric tagging for relative quantification. Data were analysed with Protein Pilot (Ab Sciex, Framingham, MA, USA). Proteins with expression significantly different across the different tissue types were subjected to pathway analysis with Metacore software. Stratification of patients into those showing low or high response to chemotherapy allowed the identification of proteins that were differentially expressed in the two groups and thus represented potential response biomarkers.

Results: 5768 discrete proteins were identified, with 1814 present in all samples and therefore used for analysis. Principal component analysis of relative protein abundance separated liver parenchyma from other tissue types, but did not separate individual patients. No proteins were significantly different between primary and metastatic tumours. 25 proteins were significantly (p < 0.05) differentially expressed in the primary tumour compared with normal colon, whereas 53 were different between the liver metastases and normal colon. Five candidate proteins that predict histopathological response to fluorouracil-based chemotherapy regimens were identified, including the FAD binding protein NQO1.

Conclusion: Proteomic sequencing of matched primary and metastatic colorectal cancer samples is feasible with high protein coverage. Analysis of dysregulated proteins revealed putative pathways that might be implicated in carcinoma progression and metastasis or serve as potential novel drug targets. The high degree of similarity between the primary and secondary proteomes suggests that information from primary tissue is predictive of the metastatic phenotype. Further targeted analysis of proteins involved in drug activation and metabolism, as well as the validation of NQO1 as a potential biomarker and drug target, is underway.

No conflict of interest.

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108. Liver resection for colorectal metastases in an ageing population: A risk worth taking?
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Introduction: Recent advances in surgical technique, anaesthesia and intensive care has greatly reduced morbidity and mortality associated with liver resection for colorectal liver metastases. This could widen the spectrum of candidates suitable for surgical treatment, particularly amongst the elderly population. We assessed the outcomes of the elderly (age 70+) following liver resection for colorectal metastases at our unit and compared these with a younger patient population (age <70).

Methods: Patients undergoing liver resection for colorectal liver metastases at our unit from 01/01/03 to 31/12/12 were included for study. Patients were divided into elderly (age 70+) and younger (n<70) cohorts and analyzed independently. Primary variables assessed were overall and disease free survival, 90 day all cause mortality and morbidity. Secondary variables assessed were patient and tumour demographics, hospital stay, procedure type (major/minor), R1 resection rate, intra-operative blood loss and prescription of adjuvant chemotherapy.

Results: A total of 215 patients were divided into elderly (n=75) and younger (n=140) cohorts. Patient and tumour demographics were similar in both groups, although the younger cohort tended to have more nodal disease at presentation (p=0.008) and also tended to receive more adjuvant chemotherapy (p<0.001). R1 resection rate was 8.8% with no difference seen between either group (p=ns). Perioperative blood loss, hospital stay, 90-day mortality and morbidity were also similar (p=ns). Overall 5-year survival was 43% and similar in both groups as was disease free survival (p=ns).

Conclusion: Mortality, overall and disease free survival was similar in our elderly compared to younger population, although elderly patients tended to receive less adjuvant chemotherapy. Our data supports growing evidence that elderly patients should not be excluded from liver resection for colorectal liver metastases based on chronological age alone.

No conflict of interest.

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109. Surgical resection of colorectal liver metastases: Does nodal status of the primary tumour have prognostic value after surgery for CRLM?
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Background: Over 50% of patients suffering from colorectal cancer develop metastases, with the liver being prone to distant disease progression. With modern surgical therapies, patients with colorectal liver metastases (CRLM) experience 40-60% 5-year survival. Various prognostic variables determine survival after resection of CRLM, which are included in Fong’s clinical risk score (CRS). Lymph node status of the primary tumour is included in this CRS. Since its publication in 1999, standard adjuvant chemotherapy for lymph node positive colon cancer patients was introduced. No adjuvant therapy is administered in rectal cancer patients in the Netherlands. This study evaluated the prognostic value of nodal status of primary colon tumours in patients undergoing resection for CRLM, in the era of multimodal therapies.

Methods: Between January 2000 and December 2011, 623 patients underwent curative surgery for CRLM. Synchronous metastases were excluded (n=330): thus, systemic treatment had only been administered for the primary tumour (adjuvant), and nodal status of the primary tumour was known before resection of CRLM. In 7 patients nodal status was unknown. The definitive study population comprises 286 patients. Patient characteristics, treatment of primary tumour and its CRLM were analysed with regards to overall survival (OS) after liver resection.

Results: 5-year OS of patients in this study was 41%. Only Fong’s CRS was prognostic (5-year OS: high risk: 33% vs low risk: 43%, p=0.04). 5-year OS was similar for colon and rectal cancer (42% vs 40%, p=0.62). In primary lymph node positive colon cancer, 5-year OS was 42%, similar to lymph node negative tumours (41%, p=0.99). Patient characteristics were akin, except for administration of adjuvant chemotherapy (p=0.001). In primary lymph node positive rectal cancer patients, 5-year OS was 32% vs 49% in lymph node negative cancer (p=0.04). Patient characteristics in this group differed exclusively on basis of T-stage of the primary tumour (T3-4: N+ 87%, NO 53%, p<0.001). However, solely lymph node status was prognostic in primary rectal cancer patients.

Conclusion: The current study demonstrates that nodal status of primary colon cancer has no prognostic value in patients undergoing resection for CRLM. In contrast, nodal status in primary rectal cancer is significantly prognostic. A possible explanation might be the introduction of adjuvant chemotherapy for node positive colon cancer after publication of Fong’s CRS.

No conflict of interest.

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