mutations − in 61 codon and one mutation was found in 146 codon of KRAS gene. Frequency of mutation in women was higher than in men (67.4% and 43.2%, respectively). Mostly often KRAS-mutation was found in patients younger than 39 y.o. (66.7%). In patients older than forty it was found that frequency of mutation increased depending on age. Mutations were found in a group of patients where frequency of oncological malignancies was 29.2% but frequency of this sign in group with wild type of gene was 43.7%. Combination of adenocarcinoma with polyps was found in 16.7% in group with mutant gene and only in 6.9% in group with wild type. Frequency of KRAS-mutation in colon cancer was 22.2% and 40.4% in rectal cancer. Metastatic lymphatic spread was found in 46.2% of patients with mutation and only in 29.2% of patients with wild type KRAS-gene.
Conclusion: KRAS-mutation occurs two times often in rectal cancer than in colon that can be the evidence of different pathways of their growth. In patients with mutation combination of adenocarcinoma and polyps occurs often than in patients with wild type of gene. Tumours with mutant status give metastatic spread in lymphatic nodes almost two times often than tumours with wild type.

6066 POSTER

Does the "Two Week Wait" Target Improve the Waiting Times for Specialist Review and Also Waiting Time Between First Seen by Colorectal Cancer Specialist and Diagnosis of Colorectal Cancer?

M. Kumari[1], I. Nikolopoulos[1], S. Huf[1], D. Corry[1], K. Thakur[1]. [1]*Queen Elizabeth Hospital, General Surgery, London, United Kingdom*

Background: Incidence rates of colorectal cancer have risen very slowly for two decades, while mortality rates have fallen by over 25 per cent. 5-year survival rates have risen steadily to nearly 50 per cent. Cancer waiting time targets were introduced to monitor service performance via process improvement. The intention was to improve the outcome (survival) of the disease. The aim of the study was to assess whether the "two week-wait" target can improve survival in patients with colorectal cancer.
Materials and Methods: 613 patients were diagnosed with colorectal cancer between January 2002 and December 2006. Data were retrospectively collected from the cancer database at Queen Elizabeth Hospital, London. Survival was compared in patients that were referred via the two week-wait rule (Group 1) and those not referred via this pathway (Group 2).
Results: Only 27% of patients were referred under the two week-wait rule and of the remainder a significant proportion came from Accident & Emergency and GPs (131 and 144 patients respectively). Waiting time between referral and first seen by colorectal specialist for both groups is seen in Table 1 and waiting time between first seen by specialist and diagnosis of colorectal cancer for both groups is seen in Table 2.

Table 1

	Group One	Group Two
Waiting time between referral and first seen by specialist		
Average	9 days	19 days
Median	8 days	5 days
Range	0−61 days	0–233 days
Number of patients waiting after 14 days	5 (3%)	145 (33%)

Table 2

	Group One	Group Two
Waiting time between specialist review and diagnosis of colorectal cancer		
Average	22 days	22 days
Median	19 days	17 days
Range	−100 to 161 days	−20 to 429 days

Conclusions: Group One patients were seen significantly quicker by a colorectal specialist once the referral was made however in both groups there was no difference in the waiting time for diagnosis of cancer after they were seen by a specialist.

6067 POSTER

Results of the Concurrent or Staged Liver Resection for Primary Colorectal Cancer With Synchronous Hepatic Metastases

I. Shchepotin[1], O. Kolesnik[1], O. Vasiljev[1], A. Lukashenko[1]. [1]*National Cancer Institute, Abdominal Oncology, Kyiv, Ukraine*

Background: Resection of hepatic metastases is the preferred treatment for selected patients after resection of primary colorectal carcinoma, but timing is controversial. This study was designed to compare outcomes of patients receiving concurrent resection of hepatic metastases and the primary colorectal tumour with those patients receiving staged resection (within 3−6 months).
Material and Methods: We retrospectively analyzed medical records (2008–2010) of 38 consecutive patients with synchronously recognized primary carcinoma and hepatic metastases who underwent concurrent (14 patients, Group 1) or staged (24 patients, Group 2) colonic (18), rectal (20) and hepatic resections performed at our institution.
Results: Concurrent and staged groups were similar in demographics, tumour grade, stage, preoperative comorbidity (cardiac and respiratory), characteristics of hepatic metastases and single vs. multiple lesions. No significant differences were observed between groups (concurrent vs. staged) in type of colon resection ($P = 0.5$) or hepatic resection ($P = 0.1$), overall operative duration (mean, 400 vs. 360 minutes), blood loss (mean, 890 vs. 880 ml), disease-free survival from date of hepatectomy (median, 11 vs. 11 months). Overall duration of hospitalization was significantly shorter for concurrent than for staged resection (mean, 24 vs. 11 days; $P < 0.001$). It is noticed, that in Group 1 of patients there is a bigger risk of development of postoperative complications (53 vs. 34%), 34% from them were specific to a resection of a liver. Disease progressing in this group was observed in 3 cases (8.3%) in terms 3, by 5 and 11 months after operation. In Group 2 of patient resection of a liver were accompanied concerning small frequency of postoperative complications and absence of mortality. Operative mortality rate in Group 1 was 8%.
Conclusions: Staged resection colon and liver is safe and more efficient than concurrent resection for colorectal cancer.

6068 POSTER

Detection of Recurrences During Follow-up After Liver Surgery for Colorectal Metastases − Both Carcino-Embryonic Antigen (CEA) and Imaging Are Important

C. Verberne[1], T. Wiggers[1], K.M. Vermeulen[2], K.P. de Jong[3]. [1]*Groningen University Hospital, Surgery, Groningen, The Netherlands;* [2]*Groningen University Hospital, Epidemiology, Groningen, The Netherlands;* [3]*Groningen University Hospital, HepatoPancreaticoBiliary Surgery, Groningen, The Netherlands*

Background: The follow-up of patients treated for colorectal liver metastases (CRLM) is not standardized. The accuracy of Carcino-Embryonic Antigen (CEA) rise for finding recurrences after treatment for CRLM is compared here with the accuracy of routine imaging of liver and chest.
Materials and Methods: All patients in follow-up after intentionally curative treatment for CRLM from 1990–2010 were analyzed. The way in which recurrences became apparent (i.e., CEA rise, routine imaging, or both) was registered. Significant CEA rise was defined as a 25% rise compared with the previous value. The specificity and sensitivity of rises in CEA prior to finding of recurrent disease were calculated using ROC curves. An economic evaluation of the costs per resectable tumour recurrence was performed.
Results: Recurrences were detected in 46% of the procedures through CEA rise concomitant with positive imaging, in 23% through CEA rise without positive findings on routine imaging, and in 31% through positive imaging without rise in CEA (table 1).

Table 1. Trigger leading to the diagnosis of recurrent disease.

Trigger	Recurrent disease, n = 254		
	Incurable	Curable	Total (%)
Positive routine imaging without concomitant CEA rise	52 (30.2)	28 (34.2)	80 (31)
CEA rise and positive routine imaging	78 (45.4)	38 (46.3)	116 (46)
CEA rise without positive routine imaging	42 (24.4)	16 (19.5)	58 (23)
Total	172 (100)	82 (100)	254 (100)

The numbers between brackets represent the column percentages.

For patients with elevated CEA levels before liver surgery, 78% of recurrences were found through CEA rise. In patients with normal CEA levels before liver surgery, 29% of recurrences were found through CEA rise. The resectability rates of recurrences did not differ between the different triggers (CEA rise or positive imaging).
ROC curves for a 25% rise in serum CEA for all recurrences, patients with normal CEA levels, and patients with increased CEA levels before liver surgery had an area under the curve (AUC) of 0.77, 0.66, and 0.78, respectively. Costs per (curable) recurrence are low.
Conclusions: In the follow-up of patients after liver surgery for CRLM a 25% rise in CEA serum level can detect recurrences accurately, but routine imaging is indispensable, especially in patients with normal CEA