into adenomucinosis, adenomucinosis/carcinomatosis hybrid or mucinous carcinomatosis. Clinicopathological factors were analyzed to identify their prognostic value for survival.
Results: Median follow-up was 51.5 (0.1–99.5) months. The overall 3-year survival was 70.9% (95% CI 62.0%-81.2%) and the 5-year survival was 59.5% (95% CI 48.7%-72.5%). Recurrence or progression had developed in 45%. The median disease-free survival was 25.6 months (95% CI 14.8–43.6). The 3-year disease-free survival was 43.6% (34.4%-55.2%) and the 5-year disease-free survival was 37.4% (28.2%-49.5%). Prognostic factors for survival were pathological subtype, completeness of cytoreduction and degree of tumor load ($p < 0.05$). The main prognostic factor, independently associated with improved survival, was adenomucinosis by pathology ($p < 0.01$).
Conclusion: Cytoreduction in combination with HIPEC is an efficient treatment for PMP in terms of overall and disease-free survival. Incorporation of prognostic factors, especially the pathological subtype, in the pre-operative work-up improves selection of patients who benefit from this treatment.

620 POSTER

Analysis of 10 prognostic factors in patients having a complete cytoreduction plus perioperative intraperitoneal chemotherapy for carcinomatosis from colorectal cancer

R.G. da Silva, P.H. Sugarbaker. *Washington Cancer Institute, Washington, DC, USA*

Background: Although lymph node and liver metastases are recognized as indications for the resection of metastatic disease from colorectal cancer, carcinomatosis has not traditionally been regarded as having surgical treatment options. Recently, numerous reports from USA and Europe have suggested that complete surgical removal of carcinomatosis combined with thorough irrigations of the peritoneal cavity with chemotherapy could result in long-term survival in selected patients. The proper selection factors are important in that elective palliative surgery in these patients is usually not of benefit and is not standard of practice.
Methods: From a database of 156 patients with carcinomatosis from colorectal cancer, 70 had a complete cytoreduction and therefore a possibility for long-term survival. A retrospective analysis of data prospectively recorded in these 70 patients was performed. Ten variables were subjected to a univariant and multivariant analysis using survival as an endpoint.
Results: The peritoneal carcinomatosis index ($\leqslant$20 vs. >20) was significant with a p-value of 0.0012. Also significant was negative vs. positive lymph nodes ($p = 0.03$). Improved but not significant differences in survival were present in moderate and well-differentiated vs. poorly-differentiated cancers, female sex, mucinous vs. intestinal type histology, location within the colon vs. rectum and age >30 years. If an adverse factor such as cancer perforation was present at the time of primary cancer resection, this resulted in a diminished survival with marginal statistical significance ($p = 0.056$).
Conclusions: In patients who have a complete cytoreduction, a limited volume of carcinomatosis and negative lymph nodes suggests an improved prognosis. A trend towards diminished survival was noted in poorly differentiated cancers, male sex, non-mucinous histology, location in the rectum and age <30 years. These data can be interpreted to suggest that the earlier in the natural history of the disease that these treatments are initiated, the more favorable the long-term results; prevention of carcinomatosis in primary colorectal cancer patients at high risk for local-regional recurrence needs to be explored.

621 POSTER

Should the primary tumour be resected in patients with colorectal cancer and non-resectable synchronous metastases?

D. Malka[1], S. Louafi[1], C. Allonier[2], O. Bouché[3], J. Raoul[4], M. Mousseau[5], P. Deguiral[6], L. Bedenne[7], J. Pignon[8], M. Ducreux[9]. [1]*Institut Gustave Roussy, Department Of Medicine, Villejuif, France; (.>Institut Gustave Roussy, Department Of Statistics, Villejuif, France;* [3]*University Hospital, Department Of Gastroenterology Reims, France;* [4]*University Hospital, Department Of Gastroenterology, Rennes, France;* [5]*University Hospital, Department Of Gastroenterology, Grenoble, France;* [6]*Hospital, Department Of Gastroenterology, Saint-Nazaire, France;* [7]*University Hospital, Department Of Gastroenterology, Dijon, France;* [8]*Institut Gustave Roussy, Department Of Statistics, Villejuif, France;* [9]*Institut Gustave Roussy, Department Of Medicine, Villejuif, France*

Background: Whether the primary tumour should be resected in patients with colorectal cancer (CRC) and non-resectable synchronous metastases remains controversial. In particular, the impact of primary tumour resection on overall survival (OS) and progression-free survival (PFS) is unclear.
Methods: Among the 294 patients (pts) with non-resectable colorectal metastases who participated to the FFCD 9601 study, a multicentric randomized trial which compared 4 first-line chemotherapy regimens (LV5FU2; modified LV5FU2 with low dose folinic acid; continuous infusion 5FU; and raltitrexed), 216 pts (73%) with non resected primary CRC and synchronous metastases were studied. The following baseline variables were collected: gender, age, WHO performance status (0, 1, or 2) (PS), location and resection (if performed) of the primary tumour, number of metastatic sites, carcinoembryonic antigen serum level, chemotherapy regimen, and univariate and multivariate analysis were performed using a Cox model. Survival curves were compared by the Logrank test.
Results: Among the 216 pts, 60 pts (39%) had still their primary tumour (not operated group (NOP)) and 156 pts (61%) had undergone a resection of their primary tumour (operated group (OP)). There were no difference between the two groups for baseline characteristics except for the site of the primary (rectum: 14% in OP group vs 35% in NOP group, $p = 0.0006$). The OS at 2 years was significantly better in OP group than in NOP group (24% vs 10%; adjusted relative risk of death in the NOP group (RR), 2.3; $p < 0.0001$), as well as PFS at 2 years (4% vs 0%; RR, 1.9; $p = 0.0002$). Other independent prognostic variables were: PS (RR, 2.0; $p = 0.0002$), number of metastatic sites (RR, 1.3; $p = 0.05$), and left-sided, or rectal primary cancer (RR, 0.7; $p < 0.05$).
Conclusion: Resection of the primary tumour is a strong independent prognostic factor in pts with CRC and synchronous non-resectable metastases treated with first-line chemotherapy.

622 POSTER

Prognostic factors in patients with colon cancer receiving adjuvant 5-FU-based chemotherapy: analysis of a randomized trial including 855 patients

M. Kornmann[1], S. Sander[2], L. Staib[1], D. Henne-Bruns[1], K. Link[3]. [1]*University of Ulm, Visceral and Transplatation Surgery, Ulm, Germany;* [2]*University of Ulm, Biometry and Medical Documentation, Ulm, Germany;* [3]*Asklepios Paulinen Hospital, Surgery, Wiesbaden, Germany*

Background: The influence of body mass index (BMI) and treatment-related toxicity on the long-term outcome of patients with colon carcinoma receiving adjuvant chemotherapy has not been well characterized. On the other hand several studies revealed that hospital volume is an important prognostic factor for several malignancies with superior outcomes after surgical resection at hospitals where the volume of such surgeries is high. However, many of these studies lack detailed information. In the largest German adjuvant trail in colon cancer conducted so far, we previously demonstrated that addition of FA to 5-FU + LEV for 12-months improved the adjuvant treatment of locally advanced high-risk colon cancer decreasing the recurrence rate by 8.7% and increasing the 5-year overall survival rate by 11.5%. The aim of this study was to investigate the effects of BMI, treatment-related toxicity, hospital volume and other clinico-pathological parameters on the adjuvant treatment benefit of patients with high-risk colon cancer enrolled in this trial.
Patients and Methods: Patients with curatively resected colon cancer (UICC IIb and III) were stratified according to T, N, and participating center and randomized to receive a 12-month treatment using 5-FU + LEV alone or in combination with FA or IFN alpha. Eight hundred fifty-five of 904 randomized patients (94.6%) were included in the analysis. Enrolment started in July 1992 and completed in February 1999. Gender, age, BMI, treatment-related toxicity, pathological TNM stage, tumor grading were recorded for each patient, the number of randomized patients was used as hospital volume.
Results: Age and gender did not influence the outcome. As expected T1/T2 and N1 tumors displayed a significantly better outcome that T3/T4 and N2 tumors, respectively. Patients with higher differentiated cancers also survived longer than patients with lower differentiated cancers. Interestingly, neither hospital volume nor obesity had an impact on survival. Only patients with a BMI <20 displayed a poorer prognosis compared to patients with a BMI $\geqslant$ 20. Independent of the treatment arm, patients with recorded toxicities WHO III and IV survived longer compared to patients with no or only WHO I and II toxicities.
Conclusions: The prospectively recorded data of this randomized multi-center trial suggest that hospital surgical volume and obesity had no significant effect on survival in patients with locally advanced colon cancer receiving 12-month 5-FU based adjuvant chemotherapy. Our data further suggest that treatment related toxicities WHO III and IV are accompanied with a favorable prognosis.