tumour station 1, 2, 10 and/or 12. Stomach and the different lymph node stations are send separately to the department of pathology. Furthermore, all specimens are revised later on by a referral department of pathology.
Results: In the first 18 patients, a mean of 26 lymph nodes is found (range 11−52, median 26). After pathologic revision, per patient a mean of 31 lymph nodes (range 13−58, median 26) was detected. 14 patients underwent a total gastric resection, 3 patients a subtotal gastric resection and 1 patient a distal gastric resection. Morbidity and mortality were comparable to published series. One patient died due to small bowel necrosis.
Conclusion: The D1-extra protocol including a protocolized lymph node dissection in gastric cancer leads to a much higher lymph node retrieval compared to common practice in the Netherlands. Morbidity and mortality are acceptable. Implementation of a protocolized lymphadenectomy seems warranted.
Trial registry number: NTR2306. Trial status: open for inclusion. Trial sponsors: none.

6552 POSTER

Long-term Outcomes and Prognostic Factors of Extended Esophagectomy for Submucosal Esophageal Cancer

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Background and Aims: There are still considerable controversies regarding the extent of lymph node dissection necessary during the course of esophagectomy for submucosal esophageal cancer. The aim of this study was to examine the long-term outcomes after esophagectomy with extended lymphadenectomy and to determin the prognostic factors in patients with submucosal esophageal cancer.
Patients and Methods: We retrospectively reviewed the records of 105 previously untreated patients with submucosal esophageal cancer who underwent transthoracic esophagectomy with extended (2- or 3-field) lymphadenectomy between May 1990 and April 2008.
Results: All patients had R0 resection. Ninety-eight patients had squamous cell carcinoma, and 7 had adenocarcinoma. N1 disease was present in 38 patients (36.2%), and angiolymphatic invasion in 74 (70.5%). Thirty-four patients had other primary malignancies. At a median follow-up of 101 months, the overall 5- and 10-year survival rates were 74.4% and 57.4%, respectively. Causes of death are non-cancer related diseases in 18, recurrent disease in 16 patients, other malignancies in 12. Univariate analyses showed that other primary malignancy (P = 0.0041), poor differentiation (P = 0.0203), and angiolymphatic invasion (P = 0.0347) significantly affected overall survival. There was no difference in survival between patients with N1 disease and those without (P = 0.9809). Multivariate analysis found other primary malignancy to be the only prognostic factor associated with poor prognosis (HR, 2.295; 95% CI, 1.201–4.386; P = 0.0119).
Conclusions: Esophagectomy with extended lymphadenectomy can be performed safely in patients with submucosal esophageal cancer with good long-term outcomes. After the esophagectomy with extended lymphadenectomy, no difference in survival was seen between patients with N1 disease and those with N0. Patients should be rigorously examined for other primary cancers as well as recurrent diseases during follow-up.

6553 POSTER

Outcome of Middle and Lower Bile Duct Carcinoma After Surgical Resection at Our Department

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Background: Middle and lower bile duct carcinoma (MLBDC) is a difficult disorder for diagnosis and treatment. MLBDCs are usually in the advanced stage at the time of the diagnosis and pancreatoduodenectomy (PD) is a golden standard of the treatment. In this study, we retrospectively reviewed our experiences of MLBDCs, in terms of clinocopathological features and the outcome.
Methods: Between April 2000 and March 2011, there were 70 patients with MLBDC who underwent PD at our department. Patients' clinical backgrounds, operative data, histological findings, and outcomes were reviewed.
Results: There were 40 males and 30 females with a mean age of 68.1 years. Major symptom at the time of the diagnosis was jaundice. Preoperative biliary drainage was performed in 69 cases. PD with extended lymph adenectomy, including lymph nodes located along the common hepatic artery and celiac axis, was performed in all the patients. In 10 patients, PD with extended hepatectomy was performed because carcinoma invaded hepatic hilus. And 5 patients underwent PD with portal vein resection due to portal invasion.
Median operation time was 553.0 min and median operative blood loss was 635.0 ml. There were no operation-related deaths. Pathological examination revealed that there were 3 cases of stage I, 20 cases of stage II, 30 cases of stage III, and 17 cases of stage IV. There were lymph node (LN) metastasis in 22 patients, serosal invasion (S) in 25 patients, hepatic infiltration (Hinf) in 6 patients, pancreatic invasion (panc) in 32 patients, and portal vein invasion (PV) in 2 patients. Overall 1-, 3-, and 5-year survival rates were 72%, 52% and 38%, respectively. Median survival periods of stage I, II, III, and IV were 57.5, 53, 51.4, and 21.0 months ($P > 0.05$). Median survival periods of patients with positive and negative for LN metastasis were 13.0 and 57.6 months ($P = 0.01$) respectively. No significant differences for survival rates were found in S, Hinf, panc, PV, and arterial invasion. Recurrence was found in the resected area (40.0%), liver (26.7%), distal metastasis (20%), and lymph nodes (13.3%).
Conclusions: Surgical resection is highly recommended for MLBDC. Lymph node metastasis is an only prognostic parameter after surgical resection.

6554 POSTER

Surgical Exploration is Superior to All Other Modalities for Locating Occult Neuroendocrine Tumours

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Background: Many patients with neuroendocrine tumours have hepatic metastases at diagnosis. However, even when extensive metastases are present, primary tumours remain very small and difficult to locate. The majority of primary tumours are located in the intestine and their resection is recommended to prevent bowel obstruction and ischemia. In addition, recent studies indicate that removing midgut neuroendocrine tumours is associated with improved survival rates. Most patients undergo extensive preoperative imaging and procedures to search for these tumours. We hypothesized that laparoscopic abdominal exploration is superior to all other techniques for locating them.
Materials and Methods: Records of patients with neuroendocrine tumour hepatic metastases with a diagnosis in years 2006–2010, in whom a search for the primary tumour was conducted, were retrospectively reviewed. Patients presenting with acute bowel obstruction were excluded. Results of preoperative imaging and procedures and surgical explorations were compared for their efficacy at finding primary tumours.
Results: Sixty-one patients were identified. Only 18% (11/61) of tumours were located by preoperative testing. The sensitivities of preoperative colonoscopy (25% [n = 24]), CT scan (6.9% [n = 58]), and octreoscan (2.0% [n = 50]) were low. No tumours were found by MRI (n = 9), upper endoscopy (n = 23), capsule endoscopy (n = 2) or bronchoscopy (n = 4). Surgical exploration was the most sensitive (79% [n = 61]) method of tumour detection. 70% of successful surgical localizations were laparoscopic. 72% (n = 44) of tumours were located in the small intestine, 3% (n = 2) in the appendix, 1.6% (n = 1) in the colon and 1.6% (n = 1) in the ovary. Twenty-one percent (n = 13) of tumours remained occult after an average follow up of 19 months with serial CT scans.
Conclusions: Surgical exploration was superior to all other modalities for locating primary neuroendocrine tumours. A laparoscopic approach had a high probability of finding occult primary tumours and has the advantage of rapid recovery from negative exploration. Other tests can provide information concerning extent of disease, but their sensitivity is too low to utilize them for primary tumour localization. Therefore, we recommend surgical exploration as the best method to locate primary neuroendocrine tumours in patients with known hepatic metastases.

6555 POSTER

Results of Surgical Treatment of Gastric Cancer in the Older Patients

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Background: To determine the role of age on outcomes of expanded and modified gastrectomy for gastric cancer.
Methods: We carried out the analysis of 189 gastric cancer patients with III-IV stages, older 70 years, with regard to study the role of age factor. Men − 105 (55.5%), women − 84 (44.5%). Stage III is established in 108 (57.1%) patients, stage IV in 81 (42.9%). Adenocarcinoma of various differentiation established in 50.3%, undifferentable cancer in 22.6%, mucous cancer in 8.9%, solid cancer in 7.9%, scirr in 6.9% and squamous cell carcinoma in 3.3% patients. Radical surgery was performed in 108 (57.1%) patients, palliative resection in 68 (36%). From them gastrectomy was performed

in 85 (44.9%) patients, proximal subtotal resection in 16 (8.5%) and distal subtotal resection in 75 (39.7%). Combined operations were performed in 58 (30.7%) patients. Control group formed 70 gastric cancer patients younger than 35 years old, who were performed variety kind operations.
Results: General postoperative complications developed in 39 patients (8.6%), and postoperative mortality was 8.9% in the main group. In control group complications developed in 5 (7.1%) patients and died 2 (2.8%) patients. Analysis of the remote results depending on the character of operation has shown that after radical operation 3-years survival rate was 40.9±3.5%, 3-years survival rate after palliative surgery was 20.8±3.5% in the main group. 3-years survival after radical operation was 45.0±4.3%, after radical curative surgery 3-years survival rate was 26.6±4.3% after palliative surgery in the control group.
Conclusion: Analysis the direct results of surgical treatment of gastric cancer patients in older age shows that, as a whole at the expense of numerous accompanying pathologies and decrease regeneration functions, the postoperative complications remain rather high and requires realization special methods of preparation. The satisfactory remote results of surgical treatment of gastric cancer patients in older age, in comparison with control group give the basis to perform radical surgery.

6556 POSTER

Splenic Artery Invasion in Pancreatic Adenocarcinoma of the Body and Tail − a Novel Prognostic Parameter for Patients Selection

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Background: The value of splenic vessels invasion (which identified T3 tumours) in prognosis after resection for pancreatic ductal adenocarcinoma (PDA) of the body and tail has been scarcely investigated. Aim of this study was to evaluate prognostic factors in PDA of the body/tail, emphasizing the role of splenic vessels infiltration.
Methods. Between 1990 and 2008, 87 patients who underwent distal pancreatectomy (DP) for histologically proven PDA of the body and tail were analyzed. Clinico-pathological prognostic factors for survival were evaluated. Univariate and multivariable analyses were performed.
Results. Postoperative morbidity was 31% with no mortality. The 1-, 3- and 5-year overall survival rates were 77%, 48% and 24.5%, respectively. Invasion of the splenic artery (SA) was observed in 19 patients (22%). All 19 patients with SA invasion had also SV involvement. The sensitivity and specificity of preoperative imaging in detecting SA infiltration resulted 37% and 96%, respectively. Patients with SA invasion had a significantly worse prognosis compared with those without SA invasion (median survival: 15 vs. 39 months, p = 0.014) (Figure). Of the 19 patients with SA infiltration, 17 had a recurrence. In all those 15 patients with SA involvement who died, 14 (93%) died within 2 years from surgery. Also patients with SV invasion had a poorer survival respect of patients without SV invasion (24 vs. 44 months, $P = 0.03$). On multivariable analysis, adjuvant therapy, poorly differentiation (G3/G4), R2 resection, the presence of lymph node metastases, and SA invasion were independent predictors of survival.
Conclusions. Invasion of SA is an independent predictor of poor survival in PDA of the body/tail. PDAs with SA invasion should be classified as T4 tumours rather than T3. The SA involvement implies a more aggressive tumour biology, although a radical resection can be achieved safely by a surgical standpoint. In the presence of SA infiltration, neoadjuvant treatment should be considered.

6557 POSTER

Pancreatic Endocrine Carcinoma − Lymph Node Ratio and KI67 Are Predictors of Recurrence After Curative Resections

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Introduction: Pancreatic endocrine carcinomas (PECs) are generally associated with a good prognosis after radical resection. In other pancreatic malignancies predictors of recurrence and the role of lymph node ratio (LNR) are well known, but both have been scarcely investigated for PECs.
Methods: The prospective database from the surgical Department of Verona University was queried. Clinical and pathological data of all patients with resected PECs between 1990 and 2008 were reviewed. Univariate and multivariate analysis were performed.
Results: Fifty-seven patients (male/female ratio = 1) with a median age of 58 years (33−78) entered in the study. Overall, 29 (51%) patients underwent pancreaticoduodenectomy and 28 (49%) distal pancreatectomy. Postoperative mortality was nil with a 37% morbidity rate. There were 36 (63%) patients with node metastases (N1). Patients with positive nodes had a lymph node ratio (LNR) $\leqslant 0.20$ in 44 cases whereas 13 (23%) had a LNR >0.20. The median overall survival and the median disease free survival (DFS) were 190 and 80 months, respectively. Recurrent disease was identified in 24 patients (42%) with a 2 and 5-year DFS rate of 82% and 49%, respectively. On multivariate analysis, LNR >0.20 (HR = 4.98) and a value of Ki67 >5% (HR = 2.75) were significant predictors of recurrence ($P < 0.03$).
Conclusions: After resection for malignant PECs, LNR and a Ki67 >5% are the most powerful predictors of recurrence. The presence of these factors should be considered for addressing patients to adjuvant treatment in future clinical trials.

6558 POSTER

Analysis of the N Descriptors and Other Prognosis Factors in Curatively Resected Thoracic Esophageal Squamous Cell Carcinoma

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Background: The seventh edition of the tumour, node, metastasis classification of esophageal cancer have been published. Different from the sixth edition, N descriptors are divided into N0, N1a, N1b, N2 and N3. We combined this new parameter with other well-established prognostic factors and performed multivariate survival analyses to validate its value in Chinese thoracic esophageal squamous cell carcinoma (TESCC).
Methods: We try to validate the new staging project in 1002 patients who underwent complete surgical resection (R0) for TESCC in single institution of Zhejiang Cancer Hospital from 2003 to 2008. Patients who received preoperative chemotherapy and/or radiotherapy were excluded. Variables in the analysis included age, gender, tumour location, local tumour stage, degree of cell differentiation and the stage of pN or vascular involvement, adjuvant chemotherapy and adjuvant radiotherapy. Survival curves were estimated using the Kaplan–Meier method and compared by the log-rank test. Multivariate analysis was performed by Cox regression model. Statistical analysis was performed using SPSS software, Version 13.0 (SPSS Inc., Chicago, IL). All probability values were two-sided and p values <0.05 were considered statistically significant.
Results: The median overall survival (OS) of different pN+ (pN1a, pN1b, pN2 and pN3) were 41.1, 21.3, 16.1 and 12.8 months respectively ($X2 = 57.91$, $p < 0.001$). The 5-year OS rate of patients with different pN+ (pN1a, pN1b, pN2 and pN3) were 43.7%, 25.0%, 14.4% and 11.8% respectively. The 5-year disease-free survival rate of patients with different pN+ (pN1a, pN1b, pN2 and pN3) were 37.8%, 24.1%, 11.4% and 3.8% respectively ($X2 = 60.09$, $p < 0.001$). Variables associated with worse OS on univariate analysis were male, length of tumour $\geqslant 5$ cm, deeper depth of invasion, more lymph node metastasis, higher histologic grade, vessel involvement positive, postoperative radiotherapy and postoperative chemotherapy. By multivariate analyses, gender (HR 0.54; 95% CI 0.37–0.80; p = 0.002), depth of invasion (HR 1.42; 95% CI 1.22–1.67; p < 0.001), histologic grade (HR 1.17; 95% CI 1.01–1.36; p = 0.040), and the stage of pN (HR 1.48; 95% CI 1.37–1.60; p < 0.001) were independent predictive factors for OS.
Conclusions: pN stage in the 7th edition is a significant independent prognostic factors in patients after curative surgery in Chinese TESCC.

6559 POSTER

Changes in Treatment for Advanced Carcinoma of the Biliary Tract With Cetuximab

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Background: The role of chemotherapy in advanced carcinoma of the biliary tract is limited. While resistance to cytotoxic chemotherapy may vary according to tumour location in the biliary tree, the value of cisplatin containing regimens was confirmed in a large prospective randomized trial and has become the standard of care for treatment for advanced carcinoma of the biliary tract. The recent addition of cetuximab to cisplatin-containing regimens has resulted in increased response rates in a phase II trial. A randomized phase II trial is now completed.
Material and Methods: We retrospectively evaluated all 37 patients diagnosed with advanced carcinoma of the biliary tract referred to a single clinical practice in a Brazilian Cancer Center from January 2005 to March 2011.