

(typical food derived from corn), processed meats, salty foods and chili. *Helicobacter pylori* was found in 30.7% of the samples.

**Conclusion:** Statistically significant association was found between blood group A and risk for developing gastric cancer, and have first-degree relatives with other different from gastric cancer. The age <50 ages was associated with reduction in the risk of cancer.

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POSTER

# **Is minimally invasive oesophagectomy for cancer decreasing pulmonary complications? – results from a case-control study**

C. Mariette<sup>1</sup>, N. Briez<sup>1</sup>, G. Piessen<sup>1</sup>, A. Claret<sup>1</sup>, J.P. Triboulet<sup>1</sup>. <sup>1</sup>University Hospital C. Huriez, Digestive and Oncological Surgery, Lille, France

**Background:** Morbidity after oesophagectomy for cancer remains high, especially due to pulmonary complications. Rapid development of minimally invasive surgery is related to less morbidity because of its less aggressive approach. The aim of our study was to compare 30-day pulmonary morbidity of oesophageal cancer patients who underwent surgical resection by open standard technique (including laparotomy and right thoracotomy = S group) versus minimally invasive procedure (including abdominal laparoscopy and open right thoracotomy = MI group).

**Methods:** Between January 2002 and June 2008, 331 oesophageal resections were performed for cancer. The laparoscopic approach for gastropasty achievement has been progressively introduced since 2005 for unselected patients. We carried out a prospective case control study among patients who benefited from the mini-invasive laparoscopic procedure (MI) and control patients with the standard technique (S). Sixty seven patients from the MI group were matched according to age, gender, location and tumoral status, physical status score, histological type, weight loss and neoadjuvant chemoradiotherapy to patients from the S group (n = 183).

**Results:** The two groups were similar in terms of the previous matching criteria. Global post-operative mortality and morbidity rates were 2.4% and 41.2% respectively. Conversion rate was 1.6% (n = 4). Pulmonary complications occurred significantly less frequently in the MI group (16.4% vs 34.4%, p = 0.006) and were of lesser gravity (14.9% of major pulmonary complications in the MI group vs 30.0% p = 0.016). There was no difference concerning mortality (1.5% vs 2.7%), overall morbidity (38.8% vs 42.0%), anastomotic leak (5.9% vs 3.8%), re-operation (6.0% vs 8.7%), gastropasty distention (5.9% vs 2.2%) and septic complications (13.4% vs 18.6%).

**Conclusion:** This is to our knowledge, the most important prospective study showing a decrease of both incidence and gravity of pulmonary complications by using the mini-invasive surgical approach in the oesophageal cancer treatment. Further long term oncological results should still be evaluated. A french multi-centric randomized trial is beginning from this perspective.

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POSTER

# **The difference in standardized uptake value on 18F-FDG-PET before and after pre-operative chemotherapy is a prognostic factor for recurrence and survival in patients with gastroesophageal cancer**

F. Chionh<sup>1</sup>, D. Handolias<sup>2</sup>, A. Poon<sup>3</sup>, V. GebSKI<sup>4</sup>, S. Dayan<sup>5</sup>, A. Aly<sup>6</sup>, N. Tebbutt<sup>1</sup>. <sup>1</sup>Austin Hospital, Medical Oncology Unit, Victoria, Australia; <sup>2</sup>Peter MacCallum Cancer Centre, Department of Haematology and Medical Oncology, Victoria, Australia; <sup>3</sup>Austin Hospital, Centre for PET, Victoria, Australia; <sup>4</sup>University of Sydney, NHMRC Clinical Trials Centre, New South Wales, Australia; <sup>5</sup>Austin Hospital, Department of Anatomical Pathology, Victoria, Australia; <sup>6</sup>Austin Hospital, Department of Surgery, Victoria, Australia

**Background:** Peri-operative (pre- and post-operative) chemotherapy can improve survival in patients with operable gastroesophageal cancer. <sup>18</sup>F-FDG-PET has an established role in pre-operative staging of these cancers, however its utility in predicting response and prognosis is less well-defined. We studied associations between (i) baseline standardized uptake value (SUVmax) on <sup>18</sup>F-FDG-PET before pre-operative chemotherapy and (ii) the difference in SUVmax on <sup>18</sup>F-FDG-PET before and after pre-operative chemotherapy and the endpoints of pathological response, disease-free survival and overall survival (OS) in patients with gastroesophageal cancer.

**Materials and Methods:** We used the Austin Hospital Centre for PET database to identify patients with <sup>18</sup>F-FDG-PET scans performed both before and after pre-operative chemotherapy between March 2003 and September 2008. Information on patient demographics and outcomes were obtained from medical records. A pathologist determined histopathological features including tumour site, histology subtype, grade, pathological T and N stage, LVI, R0/R1 resection status, and tumour regression grade. A nuclear medicine physician determined SUVmax of the primary tumour before and after pre-operative chemotherapy.

Potential prognostic factors for recurrence and death and were evaluated using univariate and multivariate Cox regression analyses. The association between change in SUVmax and pathological response was tested using a chi-squared test.

**Results:** 45 patients were included, median age 62 years (range 42–80). The median follow-up time was 35.9 months.

There was no association between baseline SUVmax before pre-operative chemotherapy and the risk of death or recurrence. Those with  $\geq 35\%$  decrease in SUVmax after pre-operative chemotherapy had a 62% reduction in risk of death (HR 0.38, 95% CI 0.17–0.83, p = 0.015) and a 65% reduction in risk of recurrence (HR 0.35, 95% CI 0.16–0.75, p = 0.007) compared to those with <35% decrease in SUVmax. The median OS in those with  $\geq 35\%$  and <35% decrease in SUVmax was 34.7 months and 16.1 months, respectively (log rank test p = 0.012). Change in SUVmax was not associated with pathological response (p = 0.24).

**Conclusions:** Metabolic response on <sup>18</sup>F-FDG-PET after pre-operative chemotherapy was associated with a reduction in the risk of both recurrence and death in this study. This suggests a role for the use of <sup>18</sup>F-FDG-PET scans before and after pre-operative chemotherapy to predict prognosis.

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POSTER

# **Survival of complete responder patients treated for oesophageal cancer is better after chemoradiotherapy followed by surgery than chemioradiotherapy alone – Case control study**

C. Mariette<sup>1</sup>, M. Messager<sup>1</sup>, G. Millet<sup>1</sup>, N. Briez<sup>1</sup>, G. Piessen<sup>1</sup>, J.P. Triboulet<sup>1</sup>. <sup>1</sup>University Hospital C Huriez, Digestive and Oncological Surgery, Lille, France

**Background:** Exclusive chemoradiotherapy and chemoradiotherapy (CRT) followed by surgery are two optional strategies for curative treatment of oesophageal cancer. The aim of this study was to compare survival in case of complete response after exclusive CRT versus after neoadjuvant CRT.

**Methods:** Between 1995 and 2007, 1176 patients were treated for oesophageal cancer in our center. A case-control study was achieved among complete morphological responders after exclusive CRT (ECRT group) and complete histological responders after neoadjuvant CRT followed by surgery (control group, NCRT). Fifty five patients from the ECRT group were matched according to age, gender, tumoural location, TNM stage, ASA score, histological type and weight loss to 111 patients from the NCRT group. Response to CRT was assessed with endoscopy + biopsy and tomodesitometry in the ECRT group, and with histology of the primary tumour in the NCRT group.

**Results:** The two groups, ECRT and NCRT respectively, were similar in terms of patients medium age (59 vs 57 years), squamous cell carcinoma rate (87% vs 91%), ASA score 2 or 3 (65% vs 76%), infracardinal location (71% vs 77%) and locally advanced disease (64% vs 60%). After a median follow-up of 29.5 months, there were significant differences regarding median time to recurrence (10 vs 18 months, p = 0.012), incidence of overall (67.2% vs 34.4%) and loco-regional recurrences (33% vs 15%, p < 0.001). Median and 5-year survival rates were 25 vs 61 months and 19% vs 50% (p = 0.001), respectively.

**Conclusion:** Survival in the situation of complete response is far better after CRT followed by surgery than after CRT alone. It is then convincing to promote surgical resection for these selected patients regarding to better locoregional control, and above all because evaluation of complete morphological response appears to be inefficient.

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POSTER

# **Cancer cells on intraoperative peritoneal cytology for gastric cancer**

T. Nakamura<sup>1</sup>, N. Haga<sup>1</sup>, Y. Fukai<sup>1</sup>, T. Akao<sup>1</sup>, H. Ojima<sup>1</sup>. <sup>1</sup>Gunma Prefectural Cancer Center, Surgical Oncology, Ota Gunma, Japan

**Background:** Detection of cancer cells on intraoperative peritoneal cytology (CY1) is one of the prognostic factors for gastric cancer and is classified in stage 4 (the poorest prognosis) in Japanese Classification of Gastric Carcinoma. Strategy for CY1 is the issue to debate and depends on the institution. We analyze characteristics of CY1 gastric cancer and assess the strategy.

**Materials and Methods:** We reviewed all patients whose celiotomy for gastric cancer had detected CY1 from January 2000 to March 2008 in Gunma Prefectural Cancer Center in Japan. We evaluated the clinical course of CY1 patients who had been staged preoperatively in M0 (no distant metastasis).

**Results:** Forty three patients were classified in CY1 among 1271 celiotomies for gastric cancer. Thirty nine (3.1%, male 27, female 12) were staged in M0 and other four in M1 pre-operatively. Although Borrmann type, lymph node status (N), and distant metastasis (M) have no influence to the

prognosis in CY1, depth of tumor invasion (T) is correlated to the survival. T4 patients showed significantly poorer prognoses than T3 ( $p = 0.0011$ ). The survival is not significantly different between resection of primary tumor and no resection. Patients with gastro-jejunal by-pass showed significantly poorer prognoses as compared with other surgery ( $p = 0.0002$ ). Thirty four patients had additional anticancer treatment other than surgery. Three had chemo-radiotherapy. Eleven had multi-drug combination chemotherapy. Twenty had single drug regimen as the 1<sup>st</sup> line chemotherapy after operation. There is no statistical difference for their survival between these three groups ( $539 \pm 163$  days,  $545 \pm 126$  days,  $600 \pm 13$  days,  $p = 0.7682$ ). **Conclusions:** Only T factor revealed prognostic influence among CY1 gastric cancer. Volume reduction surgery failed to reveal survival benefit for CY1. Chemotherapy with single agent showed the same survival impact as multidrug regimen for the 1<sup>st</sup> line.

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POSTER

**Metabolic response with [18F] fluorodeoxyglucose (FDG) Positron Emission Tomography (PET) scanning during chemoradiotherapy (RT-CT) of oesophageal cancers: feasibility and prognostic value**

X. Cuenca<sup>1</sup>, E. Hindie<sup>2</sup>, L. Quero<sup>1</sup>, V. Hennequin<sup>1</sup>, J.L. Moretti<sup>2</sup>, C. Maylin<sup>1</sup>, C. Hennequin<sup>1</sup>. <sup>1</sup>Hôpital Saint Louis, Radiotherapy, Paris, France; <sup>2</sup>Hôpital Saint Louis, Nuclear Medicine, Paris, France

**Background:** Assessment of metabolic response, defined as a decrease of Standardised uptake value (SUV)  $\geq 50\%$ , realized during RT-CT could help to define the patients who do not need surgery and could be treated by exclusive RT-CT.

**Material and Methods:** Between July 06 and August 08, 35 consecutive patients (pts) (M/F ratio = 21/14; median age 68 yrs) who began a treatment for locally advanced cancer of the oesophagus (T3: 32 pts, T4: 3 pts; N1: 23 pts, M1a: 3 pts, squamous cell carcinoma: 28 pts) by RT-CT (5FU, cisplatin and 40 Gy) were explored with PET prior any treatment and planned to have a second PET at 20 Gy. PET images were evaluated without knowledge of conventional imaging and clinical history. PET results and Maximum SUV were related to disease-free survival (DFS) and overall survival (OS).

**Results:** 7 pts (19%) could not have the second PET for these reasons: Progressive disease (3), RT not performed (1), No FDG uptake at 1<sup>st</sup> TEP (1), patient refusal (2). 28 pts are evaluable. Mean SUV max before treatment was 10.8 and at 20 Gy, 6.0 ( $p < 0.0001$ ). There were 12 (43%) metabolic responders. 6 pts underwent surgery with 2 pathological complete responses. DFS at 1 yr was 53% for metabolic responders and 10% for non-responders ( $p = 0.0003$ ). OS rates were 80% vs 46%, respectively ( $p = 0.1$ ).

**Conclusion:** Evaluation of metabolic response with 18-FDG PET-scan could be done for 80% of the patients in routine practice. It is correlated to DFS and probably to OS. Evaluation of response to chemoradiotherapy in locally advanced oesophagus cancer could be done by radiology and endoscopy, which are still necessary, but PET-scan could help in the decision of salvage surgery.

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POSTER

**A phase II study of adjuvant chemotherapy with docetaxel, capecitabine and cisplatin in patients with curatively resected stage IIIB and IV advanced gastric cancer**

M. Kang<sup>1</sup>, M. Ryu<sup>1</sup>, B. Ryoo<sup>1</sup>, C. Kim<sup>1</sup>, B. Kang<sup>1</sup>, S. Lee<sup>1</sup>, H. Chang<sup>1</sup>, J. Lee<sup>1</sup>, T. Kim<sup>1</sup>, Y. Kang<sup>1</sup>. <sup>1</sup>Asan Medical Center, Oncology, Seoul, Korea

**Background:** Previously we observed very good efficacy of docetaxel, capecitabine, and cisplatin combination chemotherapy (DXP) in neoadjuvant or palliative setting in advanced gastric cancer. The aim of this study was to evaluate the efficacy and safety of DXP triplet as an adjuvant chemotherapy in gastric cancer at high risk of recurrence after curative resection.

**Methods:** Between January 2007 and August 2008, patients with pathologic stage IIIB or IV (M0) after curative D2 dissection were enrolled in this study. Adjuvant DXP consisted of 6 cycles of docetaxel 60 mg/m<sup>2</sup> IV on day 1, cisplatin 60 mg/m<sup>2</sup> IV on day 1, and capecitabine 1,875 mg/m<sup>2</sup>/day PO on day 1-14 every 21 days, which started from 3 to 6 weeks after the surgery.

**Results:** A total of 46 patients were accrued. Among them, 13 (28%) had stage IIIB, and 33 (72%) had stage IV. Ten (22%) underwent distal gastrectomy, and 36 (78%) underwent total gastrectomy. Thirty-nine (85%) patients completed planned 6 cycles of DXP chemotherapy. After a median follow up of 10.8 months (range 5.6-22.7 months) for the surviving patients, 6 patients died and 9 patients relapsed. 1-year relapse free survival and 1-year overall survival rates were 84% and 92%, respectively. Major toxicity was neutropenia, grade 3/4 of which occurred in 77% of patients. But there was only 4% of neutropenic fever and no treatment related mortality. Grade

3/4 nonhaematologic toxicities were anorexia (21%), nausea (10.7%), and stomatitis (4.3%). Relative dose intensities of docetaxel, capecitabine, and cisplatin were 0.87, 0.75, and 0.94, respectively.

**Conclusions:** These data suggest that DXP triplet can be safely administered in adjuvant setting. Further follow-up is needed to evaluate long-term efficacy of adjuvant DXP triplet in stage IIIB or IV (M0) gastric cancer.

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POSTER

**The clinicopathologic features and clinical outcomes of gastric cancer initially presented with disseminated intravascular coagulopathy**

J. Rhee<sup>1</sup>, S.W. Han<sup>1</sup>, D.Y. Oh<sup>1</sup>, S.A. Im<sup>1</sup>, T.Y. Kim<sup>1</sup>, Y.J. Bang<sup>1</sup>. <sup>1</sup>Seoul National University Hospital, Internal Medicine, Seoul, South Korea

**Background:** There are a few patients with disseminated intravascular coagulopathy (DIC) as the first presentation of gastric cancer and there are few systematic studies for prognosis and clinical outcome of these patients. We evaluated the clinicopathologic features and clinical outcomes of this population.

**Materials and Methods:** We consecutively enrolled patients diagnosed with metastatic or recurrent gastric cancer and DIC at initial presentation of cancer between July 2001 and June 2008 in Seoul National University Hospital. DIC was diagnosed by International Society on Thrombosis and Hemostasis or Korean Society on Thrombosis and Hemostasis criteria. Clinicopathologic variables and clinical outcomes were analyzed retrospectively.

**Results:** Twenty-one patients were enrolled. Median age was 47 years (range, 24-72 years) and 13 patients (61.9%) were male. Performance status was ECOG 1 (n=4), 2 (n=9), 3 (n=4) and 4 (n=4). Eighteen patients (85.7%) had bone metastasis and 9 patients (42.9%) had hemorrhagic complication of DIC: tumor bleeding of stomach 6, subdural hematoma 1, bleeding from ruptured metastatic tumor of liver 1, and hemorrhagic cyst formation of liver 1. Fourteen patients (66.7%) received palliative chemotherapy. Others received only best supportive care (BSC). The important factors influenced to abandon the palliative chemotherapy, were uncontrolled bleeding (n=4), spinal cord compression with neurologic deficit (n=2), and combined infection (n=1). The median overall survival (OS) of all patients was 58 days (range, 2-342 days). The OS of BSC was significantly shorter than that of chemotherapy group (median, 16 vs. 99 days,  $P < 0.001$ ).

In chemotherapy group, there were 11 response evaluable patients: 2 partial response (18.2%), 5 stable disease (45.5%), 4 progressive disease (36.4%).

Median progression free survival and OS of patients with stable disease were 89 days (range, 83-191 days) and 117 days (range, 94-315 days), respectively. And OS of patients with progressive disease in chemotherapy group, was significantly longer than that of BSC group (median, 92 vs. 16 days,  $P = 0.009$ ).

**Conclusion:** The prognosis of gastric cancer initially presented with disseminated intravascular coagulopathy is poor but palliative chemotherapy prolongs overall survival compared with BSC. Therefore, early and intensive management for correctable complication of DIC followed by chemotherapy should be considered in this population.

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POSTER

**Helicobacter pylori infection as an independent prognostic factor for locally advanced gastric cancer with curative resection**

J. Choi<sup>1</sup>, Y. Hwang<sup>1</sup>, S. Kang<sup>1</sup>, H. Lee<sup>1</sup>, S. Jeong<sup>1</sup>, J. Han<sup>2</sup>, J. Kim<sup>2</sup>. <sup>1</sup>Ajou University Hospital, Hematology-Oncology, Suwon, South Korea; <sup>2</sup>Ajou University Hospital, Pathology, Suwon, South Korea

**Background:** A few studies reported the association between *helicobacter pylori* (HP) infection and better overall survival (OS) in resected gastric cancer patients (pts).

**Materials and Methods:** We investigated the HP infection status and its association with clinicopathologic characteristics in 274 locally advanced gastric cancer pts (stage IB: 25, II: 82, IIIA: 80, IIIB: 39, IV: 48) who underwent adjuvant chemotherapy (CTX) after curative resection ( $\geq D2$  dissection). HP infection status in hematoxylin and eosin stained peritumoral tissue was graded according to the updated Sydney System and categorized as HP (-) (normal or mild infection) and HP(+) (moderate or marked infection) (Am J Surg Pathol 20:1161, 1996). Eighty-one pts received 5-FU, doxorubicin (DOX) CTX (5-FU 500 mg/m<sup>2</sup> weekly for 36 wks, DOX 40 mg/m<sup>2</sup> q 3 weeks  $\times 12$ ) with or without OK432, while 193 pts underwent 5-FU, mitomycin-C (MMC), and polysaccharide-K (PSK) CTX (5-FU 500 mg/m<sup>2</sup> weekly for 24 wks, MMC 8 mg/m<sup>2</sup> q 6 wks  $\times 4$ , PSK 3 g/day for 16 wks) (Br J Cancer 84:186, 2001, Hepatogastroenterol 54:290, 2007).