

## ABSTRACTS

ID: 714

### ANALYSIS OF VEGF GENE POLYMORPHISMS IN PANCREATIC ADENOCARCINOMA AND CHRONIC PANCREATITIS

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**Background:** Vascular endothelial growth factor (VEGF) is a potent stimulator of angiogenesis, necessary for microvasculature development and important for the growth and spread of pancreatic tumors.

**Methods:** VEGF gene polymorphisms at position C-460T and G+405C were evaluated in 22 patients with pancreatic adenocarcinoma (PA), 41 with chronic pancreatitis (CP) and 40 healthy volunteers. The serum concentrations of VEGF were measured by an enzyme-linked immunoassay.

**Results:** We found an increased frequency of the homozygous +405G/G VEGF genotype in patients with PA (54.5%) compared with those presenting CP (24.4%) and a control group (20%) ( $p < 0.01$ ). In contrast, there was no difference in the distribution of allele frequencies at a position of -460C/T. Plasma levels of VEGF were significantly higher in PA patients (mean cytokine level: 756 pg/ml) compared with CP patients (217 pg/ml) and the control group (137 pg/ml;  $p < 0.01$ ). There was no association between VEGF serum levels and VEGF gene polymorphisms. VEGF polymorphisms were also unrelated to tumor size, histologic grade, regional or distant metastases or patients' sex and age.

**Conclusion:** These preliminary results indicate that the VEGF genotype may play an important role in pancreatic carcinogenesis. Further studies are needed to investigate its possible association with PA prognosis.

ID: 751

### RATIO OF METASTATIC/RESECTED LYMPH NODES AS AN IMPORTANT PROGNOSTIC FACTOR IN PANCREATIC HEAD CANCER

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**Background:** The number of affected nodes or the metastatic/resected lymph node ratio (LNR) is a potential prognostic factor in human malignancies. The aim of this study was to evaluate the prognostic value of LNR in resected adenocarcinoma of the pancreatic head (PC).

**Methods:** Between 1980 and 2002, 96 patients underwent pancreatic head resection for PC. The best cut-off value for LNR (0, 0–20%, > 20%) was estimated with reverse Helmer contrasts.

**Results:** The median number of metastatic nodes was 2 (95% CI 1.0–3.0, range 0–36) and the median LNR was 9.7% (95% CI 7.1–14.4%). The overall median survival was 14.2 months (95% CI 10.7 to 17.7) and was significantly higher for node-negative than node-positive patients (median 34.0, 95% CI 15.5–52.4 vs median 10.6, 95% CI 8.7–12.5;  $P < 0.001$ ). Categorization of patients using the three subgroups of LNR (0, 0–20%, > 20%) significantly correlated with their survival. The Cox proportional hazards model, including all patients, demonstrated that LN involvement (HR 1.461, 95% CI 1.177–12.024), moderate or poor tumor differentiation (HR 2.330, 95% CI 1.181–6.949), and a positive resection margin (HR 3.838, 95% CI 1.390–10.597) were associated with poorer survival. If the analysis was limited to node-positive patients, LNR > 20% (HR 1.364, 95% CI 1.116–2.599) was an independent negative prognostic factor.

**Conclusion:** LNR seems to be a new and promising prognostic factor in patients with resectable PC.

ID: 789

### COMPLICATIONS AFTER SURGERY IN CHRONIC PANCREATITIS – OWN EXPERIENCE

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The aim of the study was to analyze the outcome and the complications of surgery for chronic pancreatitis. Between 1990–2005 one hundred and sixteen patients (87 male, age 23–71 years) underwent surgery for chronic pancreatitis. Intractable pain (84%) and surgical complications of the disease (pancreatic pseudocyst, duodenal or biliary obstruction, pancreatic fistula) were the main indications for surgery. In all patients, the diagnosis was proved by clinical symptoms, endoscopic retrograde cholangio-pancreatography, computed tomography or ultrasound assessment. 94 patients had been taking regular oral analgesia before the operation. Sixty six patients (57%) underwent resection of the pancreas and 50 patients (43%) were treated by drainage or by-pass procedures. Complications appeared in 46 patients (39%) for up to 30 days. The most common complications were: pulmonary (19.8%), wound infections (16.3%) and fistula (10.3%) — defined as drainage of more than 50 ml of pancreatic juice, which appears on 4–7 days postoperatively and persists for 2–3 weeks. Total operative mortality was 8.6% (10 patients): in 3 cases the cause was multiple organ failure due to haemorrhage, in 4 cases, anastomotic dehiscence and in 3 cases, other reasons. All patients reported significant pain relief. Surgery is the only effective treatment for chronic pain and surgical complications of chronic pancreatitis but surgical experience still remains the most important factor in reducing mortality and morbidity rates.

ID: 786

### BACTERIOLOGICAL ANALYSIS OF BILE IN PATIENTS WITH ACUTE BILIARY PANCREATITIS, PRESENTING DIFFERENT DEGREES OF THE DISEASE

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**Background:** Bile remains sterile under physiological conditions. The data from several studies reveal that up to 80% of patients with cholelithiasis have contaminated bile. An analogous situation should appear in patients with acute biliary pancreatitis (ABP). The only study concerning this problem was carried out by Boudewijn although the specimens of bile were taken between 11–15 days after admission.

**Aim:** The goal of the study was to determine the percentage of patients with infected bile and determine the kind of pathogens present.

**Material and method:** The group of patients under study was composed of 72 individuals with ABP (58, mild and 14, the severe form) admitted to the II Chair of General Surgery in Krakow, Poland. The model of treatment performed in our Department (ERCP and endoscopic sphincterotomy (ES) up to 24 hours and laparoscopic cholecystectomy up to 48 hours) allowed as to take the specimens of bile from the main bile duct at a very early stage of the disease.

**Results:** In 80% of patients their bile was contaminated with bacteria (91% in the severe and 77% in the mild group). In the most cases we found intestinal Gram-negative flora: E. Coli and Klebsiella. A little rear Gram-positive bacteria staphylococci and streptococci were found.

**Conclusion:** According to our knowledge, this is the first study describing bacterial flora in the bile of ABP patients just after admission. At an early time of the disease we confirmed great number of patients with contaminated bile in mild and severe ABP as well.

ID: 813

## EXTERNAL PANCREATIC FISTULA AS A COMPLICATION OF PANCREATODUODENECTOMY

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**Background:** Pancreatoduodenectomy (PD) is the only radical operation for pancreatic head tumors, both malignant and benign. While it is currently decreasing, mortality following PD is still high at over 40%. The most dangerous complication of PD is a leak from the pancreatico-jejunosomy followed by the formation of an external pancreatic fistula (EPF). The aim of the study is to estimate the rate of EPF following PDs performed in this institution as well as an assessment of factors potentially influencing the appearance of this complication

**Material:** There were 94 patients who underwent PD in the Department of General and Colorectal Surgery at the Silesian Medical University between 1998 and 2005. The group comprised 35 women and 59 men, aged 28 to 80 years. The indication for PD was a neoplastic tumor in 87 patients, and chronic pancreatitis in 7 patients. In the group of 20 patients (21.3%), a standard Whipple operation was performed, 74 of the patients (78.7%) underwent a pylorus preserving pancreatoduodenectomy (PPPD-Traverso modification). A single loop of jejunum was used in a retrocolic manner for gastro-jejunal, pancreatico-jejunal and bilio-jejunal anastomoses. A pancreaticojejunosomy was performed in all patients, with 60 patients undergoing an "end to side" procedure and 34 an "end to end" procedure. An assessment of the anastomosis was performed on the basis of the quantity and quality of the external drain contents. An analysis of amylase levels in the fluid obtained from draining was conducted on the 4th and 7th postoperative day.

**Results:** EPF was observed in 7 patients (7.4%). The rate was lower in the group of patients with pancreatic cancer (6.9%), comprised to the resection from the inflammatory indications (14.3%), and by "end to side" anastomosis (6.7%) as compared to "end to end" anastomosis (8.8%). An analysis of potentially fistula-forming factors was conducted according to: age, gender, bilirubin level, the bacteriology of gastric and pancreatic juice, Wirsung's duct width, and cohesion of the pancreas as assessed during the operation by the surgeon.

**Conclusions:** 1. The most essential factor, influencing the appearance of EPF is cohesion of the pancreas, observed during the procedure of pancreato-digestive anastomosis, and Wirsung's duct width. 2. An "end to side" pancreaticojejunosomy is performed less often with the appearance of pancreatic fistulas.

ID: 713

## ENDOSCOPIC TREATMENT WITH METALLIC STENTS OF BILIARY STRICTURE DUE TO CHRONIC PANCREATITIS

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**Background:** The main aim of this study was to evaluate the long-term efficacy of the self-expanding metal stents (SEMS) for the management of biliary strictures caused by chronic pancreatitis (BDSCP) as an alternative to hepaticojejunostomy.

**Materials and methods:** 23 patients (18 men, 5 women, mean age 57 years) with BDSCP were included in the study regarding SEMS placement. The follow-up consisted of a clinical evaluation of liver function tests and a US for 4.0 years at intervals 3 months after SEMS insertion.

Early, during ERCP they had had increasing numbers of large, biliary, plastic stents inserted for 1 year at intervals 3 months and then all stents were removed. Within 12 months of the stents' removal, restenosis occurred.

**Results:** All stents were successfully inserted endoscopically. No significant immediate postprocedural complications were noted. No stent dysfunction was detected in the observed patients during a mean follow-up of 48 months.

**Conclusions:** 1. SEMS insertion may be an effective method for long term relief of biliary obstruction in selected patients with BDSCP. 2. Surgery may be reserved for patients in whom endoscopic therapy in unsuccessful or patients who prefer surgical treatment.

ID: 776

## DIAGNOSIS AND TREATMENT OF CYSTIC LESIONS OF THE PANCREAS – STILL MIGHT BE A MYSTERY CASE PRESENTATION

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**Background:** Postinflammatory or post-traumatic pseudocysts of the pancreas are common while cystic tumours are rare. Underestimation of this problem may lead to misdiagnoses.

**Case report:** A case of a 69-year-old woman with a cystic lesion of the pancreas was reported. The lesion was first diagnosed as pseudocyst (1994) and medical treatment was performed. The cyst had enlarged and patient underwent endoscopic transpapillary drainage. As endoscopic and transcutaneous drainage brought no recovery, a cystojejunostomy was performed (2002) in another hospital. In January 2004 the patient presented acute upper GI bleeding.

An upper GI endoscopy as well as colonoscopy did not reveal the source of bleeding. The patient was deemed to be qualified to undergo emergency surgery and a distal pancreatectomy and splenectomy was performed. In a subsequent histopathological examination, pancreatic papillary partial cystic adenocarcinoma was diagnosed (2004).

**Conclusion:** The above-presented case shows the problem of pancreatic cyst management despite the progress in diagnostic and visualizing techniques.

ID: 785

## PANCREATOGASTROSTOMY AS AN ALTERNATIVE METHOD FOR RECONSTRUCTION AFTER PANCREATODUODENECTOMY. 159 CONSECUTIVE PATIENTS. 10 YEARS EXPERIENCE

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**Background:** Pancreatogastrostomy has been known as an alternative method of reconstruction after pancreatoduodenectomy. The purpose of this retrospective study was to evaluate the safety of pancreatogastrostomy after pancreatoduodenectomy at one institution.

**Material and methods:** From 1994 to 2004, 159 patients with a mean age of 58 years underwent pancreatoduodenectomy. Standard Whipple procedures were performed in 125 cases and 34 underwent pylorus preserving modification. In all of them pancreatogastrostomy was the method of choice for pancreatic reconstruction.

**Results:** The main outcome measures were postoperative morbidity and mortality. There were 56 patients (35%) who developed postoperative complications. 20 of them (12%) needed reoperation due to pancreatic leak (5), biliary leak (2), biliary stenosis (1), enteric anastomosis leak (1), hemorrhage from the pancreatogastric anastomosis (6), intra-abdominal bleeding (2), abdominal abscess (4) and eventration (2). The other 36 complications (23%) could be managed conservatively. Six patients died (mortality rate — 3.7%). Two of them had presented pancreatic leakage.

**Conclusion:** We recommended pancreatogastrostomy as an alternative, simple and safe method of pancreatic reconstruction after pancreatoduodenectomy, as it has low mortality and morbidity rates.

ID: 738

## PANCREATIC SERINE PROTEASE INHIBITOR KAZAL TYPE 1 (SPINK 1) AND CATIONIC TRYPSINOGEN GENE (PRSS1) MUTATIONS IN PATIENTS WITH CHRONIC ALCOHOLIC PANCREATITIS (CAP) AND PANCREATIC CANCER (PC)

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We have limited information regarding the pathogenic mechanism by which alcohol leads to CAP. No association between SPINK1 mutations and PC has been found. The aim of this study was to determine the frequency of PRSS1 and SPINK1 mutations in patients with CAP as well as those with PC.

DNA was isolated from 37 patients with CAP, 15 patients with PC as well as 46 healthy subjects. A N34S mutation of SPINK1 was detected with PCR-RFLP and N21I mutations of PRSS1 with ASA-PCR.

Overall 9 (24.5%) N34S SPINK1 mutations in the CAP group and 3 (6.5%) in the control groups were detected. PRSS1 mutations were detected in 5 (13.5%) patients with CAP and 2 (4.3%) in the control groups. In patients with CAP and mutations, pancreatic calcifications were detected significantly less frequently ( $p < 0.05$ ) than in patients with no mutations. Complications requiring endoscopic or surgical treatment ( $p < 0.01$ ) were also less frequently noted in CAP patients with detected mutations as compared with the remaining CAP group. Among 15 patients with PC, SPINK1 was detected in 2 of them. In the same two patients with PC, PRSS1 mutation was also found. These preliminary data suggest a high incidence of SPINK1 and PRSS1 mutations in the Polish population, as well as in those with CAP. It may be speculated that these mutations contribute to the development of CAP in patients who overindulge in alcohol. The role of SPINK1 and PRSS1 mutations in PC needs to be further evaluated.

ID: 784

### ELEVEN-YEAR EXPERIENCE WITH PANCREATODUODENECTOMY IN PATIENTS WITH PANCREATIC OR PERIAMPULLARY TUMORS

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**Aim:** A comparison of the early results of pancreaticoduodenectomy between two periods: 1995–1999 and 2000–2005.

**Material and methods:** The study comprised 236 patients undergoing pancreaticoduodenectomy for a benign or malignant tumor. In the first period (1995–1999) 100 patients were operated on: 46 with cancer of the pancreatic head, 25 with periampullary cancer, 28 with an inflammatory tumor and 1 with a benign tumor of the pancreatic head. In the second period (2000–2005) 136 were operated on: 62 with cancer of the pancreatic head, 42 with periampullary cancer, 25 with an inflammatory tumor, 2 with benign neoplasms of the pancreatic head and 5 with benign neoplasms of the ampulla. There was no statistically significant difference between the two groups in median age, sex, indications for the operation and the operative technique.

**Results:** There was a statistically significant difference in the short term mortality between the second and the first period (2.7% vs. 9.0%,  $p = 0.046$ ). Complications were significantly less frequent in the second period than in the first (27% vs. 40%,  $p = 0.054$ ). The most common complications were: pancreatic fistula (10% vs. 13%) and intraabdominal bleeding (8% vs. 4.7% respectively). Reoperations were less frequent during the second period (12% vs. 17%,  $p = 0.35$ ).

**Conclusions:** The increasing experience of the surgical team has influenced the results of pancreatic surgery leading to a decrease in complications, reoperations and short term mortality.

ID: 802

### SURGICAL MANAGEMENT OF THE PANCREATICO-PLEURAL FISTULA

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This study presents the results of seven surgically treated patients with diagnosed pancreatico-pleural fistulas. The average age of the patients was 46 years (range; 35–51 years). Pancreatic exudate was observed in the left pleural cavity in 5 cases, one case in the right pleural cavity and also bilaterally in one case. The amylase activity of the pleural exudates was on average 32 000 U/L. The fistula canal was only able to be documented in one patient during a retrograde cholangiopancreatography. The following surgical procedures were performed: distal pancreatectomy with splenectomy in 4 patients, pancreatojejunostomy (Partington-Rochelle procedure) in 2 patients and a pancreatic duct endoscopic prosthesis insertion was carried out in 1 patient. Post-operative complications were observed in 2 patients. There were no cases of hospital mortality. The average time of hospitalization was 16 days. There were no signs of pleural exudates in all 5 patients who reported for the out-patient check-up examination. Both the resection and drainage surgical procedures are regarded as effective and safe methods in the management of pancreatico-pleural fistulas.

**Key words:** pancreatico-pleural fistula, pancreatic exudates, chronic pancreatitis

ID: 804

### EXOCRINE PANCREATIC FUNCTION AFTER TRAVERSO OR WHIPPLE PANCREATODUODENECTOMY FOLLOWED UP WITH TWO DIFFERENT <sup>13</sup>C BREATH TESTS

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Presently, there is inadequate data regarding the optimal reconstructive method following a pancreatoduodenectomy. A total of 295 pancreatoduodenectomies were performed for a cancer or chronic pancreatitis between 2000–2005. Randomly, we selected 10 patients who had undergone a Whipple reconstruction and also 10 patients who had undergone a Traverso reconstruction. A preoperative examination assessment was conducted and a follow-up involving three postoperative check-ups: at 4 weeks, 3 and 6 months (two examinations: intrajejunal lipolytic activity examined with a <sup>13</sup>C mixed triglyceride <sup>13</sup>C-MTG breath test, the ability to digest starch was assessed with a <sup>13</sup>C — cornflakes breath test). The <sup>13</sup>C-CR level, after the administration of 0.3g <sup>13</sup>C-MTG, decreased from a preoperative value of a 23.94% dose to a 15.27% dose four weeks after a Traverso reconstruction ( $p = 0.0117$ ) and from a 24.8% dose to a 12.8% dose four weeks after the Whipple procedure ( $p = 0.00148$ ). Intrajejunal lipolytic activity decreased by 44.8% while the ability to digest starch was reduced by 25.6% four weeks after the Whipple pancreatoduodenectomy. The <sup>13</sup>C-CR test following the intake of 100 g of cornflakes naturally abundant in <sup>13</sup>C declined from an 18.25% to a 14.29% dose four weeks after the Traverso method had been performed ( $p = 0.053$ ). The results obtained simply distinct dynamics of the postoperative failure of the pancreatic exocrine function after Traverso and Whipple procedures, reflected by a progressive loss of lipolytic activity and a noteworthy preservation of the ability to digest starch.

ID: 814

### MICROFLORA OF INFECTED NECROSIS IN ACUTE PANCREATITIS WITH SEVERE EFFECTS

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**Background:** Infection of the parenchyma is a severe complication of acute pancreatitis (AP). This is a cause of the high death rate in this group of patients. The goal of broad spectrum antibiotic therapy is to reach adequate antibiotic concentration in the pancreatic bed and to decrease the rate of septic complications. The aim of this study was to assess the type of bacterial and mycotic flora and to estimate the outcome following a course of broad spectrum antibiotics in AP patients.

**Material:** There were 35 patients, suffering from a severe form of AP (stage D, E according to Balthazar and Ranson scale), treated in this institution between the 1998 and 2005. There were 7 women in the age range of 25–72 years, and 28 men in the age range of 30–63 years. All patients underwent several necrosectomies for infected necrosis of the parenchyma which had been clinically diagnosed. Samples of blood and necrotic tissue were taken for bacteriology at that time.

**Results:** In all patients with pancreatic necrosis, who were qualified to undergo a laparotomy, bacterial presence in tissues extirpated during a necrosectomy was confirmed. In 5 cases, Gram-positive bacteria were isolated. In 26 cases Gram-negative, as well as fungi in the other two patients was isolated. In 4 patients, the presence of anaerobes flora infection was also confirmed.

**Conclusions:** 1. The results of a bacteriological assessment confirmed the presence of Gram negative intestinal bacteria as the most frequent, as well as the seldom presence Gram positive and fungi were found. 2. Infection of pancreatic necrosis may occur despite the broad spectrum of antibiotic therapy. 3. The timing of a laparotomy should be therefore based rather on clinical grounds.

D: 777

## PANCREATIC MULTIPLE METASTASES OF RENAL CELL CARCINOMA – CASE REPORT

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Renal cell carcinoma (RCC) is a relatively seldom adult solid tumor accounting for 3% of malignancies. The most common histological type of RCC (70–80% of renal neoplasms) is clear cell carcinoma. Almost 30% of patients present metastatic disease at diagnosis while 20% present locally advanced tumors. Patients with RCC can have late recurrences in unusual localizations, such the skin, thyroid or pancreas.

The authors present a case of pancreatic multiple metastases of renal cell carcinoma 18 years after a renal tumor excision. A total pancreatectomy was undertaken. The patient presented temporary high volume ascites after surgery as well as diabetes.

One year after the pancreatectomy the patient developed detectable multiple hepatic metastases treated with high frequency ablation.

The above-presented case supports the thesis of applying an aggressive surgical strategy in selected cases of late renal cell carcinoma metastases.

ID: 773

## LIMITED PROGNOSTIC SIGNIFICANCE OF P27<sup>KIP1</sup> EXPRESSION IN ADENOCARCINOMA OF THE PANCREATIC HEAD REGION

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The aim of this study was to establish the prognostic value of p27<sup>KIP1</sup> expression in adenocarcinoma of the pancreatic head region.

The study included 45 patients with adenocarcinomas of the pancreatic head region comprising 24 of the pancreatic head itself, 18 which were periampullary, and 3 of the uncinata process. All patients underwent a standard or pylorus preserving pancreatoduodenectomy. Immunohistochemistry was carried out on paraffin-embedded blocks. Quantitative determination of p27<sup>KIP1</sup> expression was based on the proportion of p27<sup>KIP1</sup>-positive cells.

Positive p27<sup>KIP1</sup> expression was detected in 22 tumours (49%), whereas 23 tumours (51%) were p27<sup>KIP1</sup>-negative. There were no significant correlations between p27<sup>KIP1</sup>-index and stage or lymph node involvement. The median survival time in patients with p27<sup>KIP1</sup>-positive tumours was 19 months, whereas in p27<sup>KIP1</sup>-negative tumours was 18 months ( $p = 0.53$ ). A significant relationship was found between p27<sup>KIP1</sup> and radical resection ( $p = 0.04$ ). Multivariate survival analysis revealed the localization of the tumour (pancreatic head/uncinata process vs periampullary) was the only significant and independent prognosticator ( $p = 0.01$ , Cox regression model).

**Conclusion:** We conclude that p27<sup>KIP1</sup> has limited overall prognostic utility in resected carcinoma of the pancreatic head region, but its potential role as a marker of residual disease needs to be further assessed.

ID: 752

## IMMUNOHISTOCHEMICAL STAINING FOR P53, BCL-2, BAX, BAK, AND BCL-X PROTEINS ADDS LITTLE TO ROUTINE PROGNOSTIC FACTORS IN PANCREATIC DUCT CELL CARCINOMA

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**Background:** Molecular alterations related to p53 and bcl-2 family proteins have been reported to influence prognosis of patients with gastrointestinal malignancies. The aim of this study was to analyse the prognostic value of p53, Bcl-2, Bax, Bak and Bcl-X proteins in pancreatic cancer (PC).

**Methods:** Protein expression was examined by immunohistochemistry in formalin-fixed, paraffin-embedded sections obtained from 101 patients who underwent pancreatic resections for PC. Staining was arbitrarily categorized as none (< 5% of cells), weak (5–20% of cells), moderate (21–50% of cells), or strong (> 50% of cells).

**Results:** The percentage of tumours positive for p53, Bcl-2, Bcl-X, Bax and Bak was 71%, 31%, 79%, 91% and 25% respectively. p53 staining was associated with poorer differentiation and a more advanced stage of the primary tumour. Bcl-2 protein was related to lower staging, absence of lymph node metastases, and a higher proportion of smaller tumours. No statistically significant correlations could be identified for Bcl-X, Bax and Bak. The median survival of patients with staining positive for p53 and Bcl-X was significantly shorter, i.e. 13.6 vs 15.9 months ( $P < 0.05$ ) and 13.0 vs 20.7 months ( $P < 0.05$ ), respectively. No significant differences could be identified for Bcl-2, Bak, and Bax proteins.

**Conclusion:** Although immunohistochemical staining for individual proteins is associated with some tumour variables, its prognostic value is minimal.

ID: 787

## BILE CONTAMINATION WITH BACTERIA AND COMPLICATIONS IN PATIENTS WITH ACUTE BILIARY PANCREATITIS

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**Background:** The contamination of bile (bacteribilia), as shown in animal models, may be a trigger for developing acute biliary pancreatitis (ABP). It may also be a factor deteriorating the disease and therefore we tried to investigate if early bile contamination by bacteria has any implications for its outcome.

**Aim:** The aim of the study was to determine any differences between sterile and contaminated groups of patients and complications in the study group.

**Material and method:** The group of the patients was composed of 72 patients with ABP admitted to the 2nd Chair of General Surgery in Cracow. The bile was harvested in the first day from the main bile duct during an ERCP and from the gallbladder in the second day during a laparoscopic cholecystectomy. The infected group comprised 59 patients (81.9%) while the remaining 13 (18.1%) were uninfected. We compare these groups according to age, sex, biochemical and morphological blood tests, severity of disease scores, fatal outcome, time of hospitalization and complications during the course of the disease.

**Results:** We found that the number of complications in the infected group was much higher than in those patients who were uninfected (22/58 it is 37.3% vs. 1/13 it is 7.7%). We failed to find any other differences between the groups.

**Conclusions:** The infection of bile in ABP has an influence on the course of the disease.

ID: 816

## PROGNOSTIC VALUE OF IL 6 GENE POLYMORPHISM DETERMINATION AND IL-6 SERUM CONCENTRATION IN PREDICTING THE SEVERITY OF ACUTE PANCREATITIS (AP) IN HUMANS

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**Background:** The prognosis of acute pancreatitis severity constitutes the most important element in diagnostics as well as the basis for therapeutic planning.

**Aim:** This prospective study of patients with acute pancreatitis was designed based on literature data reporting a rapid increase in IL-6 concentration in acute inflammatory conditions, largely outplacating increasing values of C-reactive protein (CRP).

**Methods:** Patients hospitalised in our Department between 201–2004 years were examined for IL-6 gene polymorphism presence within the intron 4 and promoter regions. Simultaneously, IL-6 concentration was assayed on Days 1, 3, and 7 of the disease. A parallel determination of polymorphisms and IL6 concentrations was performed on the group of healthy volunteers.

**Results:** For both groups, no polymorphism in the intron 4 region was found. However, differences in the occurrence of polymorphism of the IL-6 gene promoter region were statistically significant, both by comparing the study and control groups, and by comparing the

results for patients with a heavy and mild course of pancreatitis. IL-6 concentration analysis on subsequent days of the disease showed a statistically significant increase in the value already on the first day, both by comparing the results for patients and healthy volunteers, and comparing the results for patients with a severe and mild course of pancreatitis as classified according to the Balthazar score and clinically evaluated basing on the Atlanta scale.

**Conclusions:** IL6 concentration analysis showed, already on the first day, a statistically significant increase by comparing the results for patients with severe acute pancreatitis. Its high sensitivity was also confirmed in the prognosis of pancreatitis severity, already on the first day of the course of the disease.

ID: 712

### A RARE CASE OF LARGE SEROUS CYSTADENOCARCINOMA OF THE PANCREAS

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A case of large serous cystadenocarcinoma of the pancreas in 56-year-old woman is reported. The patient was admitted with uncharacteristic complaints concerning the epigastrium lasting several months. A preoperative computed tomography (CT) scan disclosed a large pathological lesion with a diameter of 10 × 9 cm in the head of the pancreas, putting pressure on the vena cava inferior and the right renal vein.

A pancreatoduodenectomy was duly performed (Longmire-Traverso operation). The common bile duct and residual pancreas were anastomosed with a segment of the small bowel. The postoperative course was uneventful and the patient is currently doing well, without evidence of recurrence or metastasis 8 months after surgery.

Serous cystadenocarcinoma of the pancreas is a rare neoplasm with a relatively good prognosis. Pancreatic resection is the treatment of choice. Complete resection has a favorable prognosis with a low probability of recurrence.

ID: 724

### THREE INDEPENDENT FACTORS INFLUENCING SURVIVAL AFTER CURATIVE RESECTION FOR PANCREATIC ADENOCARCINOMA

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**Background:** To evaluate the long-term survival of patients surgically treated for pancreatic adenocarcinoma and to determine independent factors influencing survival.

**Material and methods:** Data was prospectively collected from 110 consecutive patients resected for pancreatic adenocarcinoma during a period of 4 years. The overall survival probabilities were calculated using the Kaplan-Meier method. All factors likely to be predictive of survival after a pancreatic resection were evaluated by univariate analysis (Log-rank test). Multivariate analysis using Cox's model was carried out for all factors with a p value < 0.1 at univariate analysis.

**Results:** The median survival of the patients was 11.2 months. None of the following factors influenced survival; the sex of the patient, preoperative bilirubin levels, intraoperative blood loss, overall postoperative morbidity, pancreas related complications or differentiation grade of the tumor.

Univariate analysis revealed that main factors influencing survival were; the age of the patient, the stage of the disease, and tumor invasion into the resection surface of the pancreas. Moreover, multivariate analysis highlighted the T stage, the number of metastatic lymph-nodes and the age of the patient at the cut-off level of 70 years, as independent factors influencing survival probability.

**Conclusion:** Survival probability after a curative resection for pancreatic adenocarcinoma was decreased significantly for patients older than 70 years, having a higher T stage and more metastatic lymph nodes.

ID: 778

### BLOOD GLUCOSE AND SERUM INSULIN LEVELS IN PATIENTS AFTER PANCREATIC RESECTION

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**Aim:** As a pancreatic resection may lead to the impairment of glucose metabolism and insulin secretion after surgery, an analysis of endocrine function of the pancreatic remnant after a partial pancreatectomy was performed.

**Material:** We analyzed 23 patients operated on because of pancreatic cancer (n = 10), ampulla of Vater tumors (n = 7), and chronic pancreatitis (n = 6). Whipple's procedure (n = 15), Traverso-Longmire's operation (n = 5), and a distal pancreatectomy (n = 3) were performed.

**Method:** Endocrine function of the pancreatic remnant was analyzed employing the Oral Glucose Tolerance Test (OGTT) and Serum Insulin Concentration (SIC), before the operation, and after intervals of 2 and 6 months. Based on the OGTT test, patients were classified into the following groups: diabetes mellitus (DM), impaired glucose tolerance (IGT), and normal (N).

**Results:** Before surgery, 6 (26%) patients (pts) were in the DM group, with 9 (39%) patients in the IGT group, and 8 (35%) patients in the N group. Two months after undergoing a partial pancreatectomy, 6 (26%) pts were in the DM group, with 4 (17%) patients in the IGT group, and 13 (57%) patients in the N group. Out of 20 patients analyzed 6 months after surgery, 6 (30%) patients were in the DM group, with 4 (20%) patients in the IGT group, and 10 (50%) patients in the N group. The median SIC values before surgery as well as 2 and 6 months afterwards were: fasting concentrations of 6.5, 3.6 and 4.6 mU/ml respectively, and 2-hours after oral glucose intakes of 51.4, 26.6 and 14.7 mU/ml respectively.

**Conclusion:** Median serum insulin concentration decreases in patients after a partial pancreatectomy without significant influence on glucose tolerance.

ID: 709

### ELEVATED TUMOR MARKER CA 19-9 IN DIFFERENTIAL DIAGNOSIS OF PANCREATIC MASS LESIONS

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**Background:** The aim of the study was to assess the utility of the serum marker, CA 19-9, in the differential diagnosis of pancreatic tumors.

**Methods:** 150 patients with heterogenic pancreatic lesions were diagnosed and treated at the 2<sup>nd</sup> Department of General Surgery of the University Medical School of Lublin between June 1998 and January 2004. Their ages ranged between 26 and 78 years. Based upon cytological and histological tests, the patients were assigned to malignant or benign groups. The serum from all the patients was assayed for the CA 19-9 test and the sensitivity and specificity of the CA 19-9 test was determined.

**Results:** Pancreatic cancer was eventually diagnosed in 99 patients and benign pancreatic lesions in 51 patients. Based upon the serum level of the CA 19-9 test, true positive results were found in 82 patients, true negative results in 47 patients, false negative results in 16 patients and false positive results in 5 patients. The sensitivity of the CA 19-9 assay was 83.8% and its specificity was 94.1%.

**Conclusions:** An elevated serum level of CA 19-9 in the presence of a pancreatic lesion usually suggests a malignant nature of the lesion. High CA 19-9 levels are typical for advanced inoperable pancreatic cancer. Taking into account the limited sensitivity and specificity of the CA 19-9 assay, its results should be interpreted as consistent with an analysis of imaging examinations such as US and CT.

ID: 710

### THE ROLE OF ULTRASOUND AND FINE-NEEDLE ASPIRATION BIOPSY (FNAB) IN THE DIAGNOSIS OF PANCREATIC MASS LESIONS: DEFINING THE INDICATIONS FOR FNAB APPLICATION

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**Background:** The aim of this study was to define the efficacy of ultrasound, computed tomography (US/CT) and fine-needle aspiration biopsy (FNAB) in the assessment of pancreatic mass lesions.

**Methods:** The study population comprised 150 consecutive patients with heterogeneous pancreatic mass lesions treated at our department between 1999 and 2004. Imaging investigations with US/CT and FNAB were carried out on all the patients. The final nature of the tumor was established based on the histopathology of patients who underwent surgery or was based on a follow-up course in patients who were not referred for surgical exploration. The sensitivity and specificity of US/CT and FNAB were calculated by comparing the clinical diagnosis resulting from US/CT interpretation and FNAB results obtained before treatment with the final diagnosis.

**Results:** FNAB appeared to be a safe and relatively simple procedure with no remarkable complications. A malignant tumor was finally diagnosed in 99 (66%) and benign in 51 (34%) patients. The sensitivity and specificity calculated for US/CT were 90% and 77.3%, respectively, and for FNAB 86.9% and 100%, respectively.

**Conclusions:** Imaging investigation with US/CT is a relatively reliable method in the differential diagnosis of pancreatic mass lesions. A positive FNAB has still remained the most accurate diagnostic method. Only small tumors should be treated without a cytological assessment.

ID: 731

### MONOCYTE SUBSETS AND NATURAL KILLER CELLS IN ACUTE PANCREATITIS

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**Background:** Alteration of the immune system is one of the major mechanisms responsible for complications in severe acute pancreatitis (AP). The aim of our study was to provide a complex evaluation of peripheral blood monocyte subsets, natural killer cells (NK cells) and cytotoxic T-lymphocytes in patients with different severity forms of AP.

**Methods:** 20 patients with mild AP (M-AP) and 15 with severe AP (S-AP) were included in our study. Peripheral blood mononuclear cells were studied on Days 1–3, 5, 10 and 30, by means of flow cytometry.

**Results:** In the peripheral blood of patients with pancreatitis we found a marked increase in the total monocyte count. In severe AP, circulating monocytes were significantly activated which was presumed from an increased expression of HLA-DR, CD54, CD69 and CD25. A concurrent increased expression of CD95 (FasR) may indicate the enhanced susceptibility of these cells to apoptosis. In patients with S-AP, a dramatic depletion of circulating NK cells (CD16/56 and CD3-CD8+) was found along with a reduction in circulating CD3+CD8+ lymphocytes (cytotoxic T-lymphocytes).

**Conclusions:** Our findings suggest profound disturbances in innate cellular immunity in patients with severe AP.

ID: 739

### EFFECT OF NF-KAPPA B ACTIVATION INHIBITOR AND ENDOTHELIN-1 ETA RECEPTOR ANTAGONIST IN EARLY CAERULEIN ACUTE PANCREATITIS (AP) IN RATS

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**Aim of the study:** To assess the cumulative effects of NF-K B activation inhibitor (pyrrolidine dithiocarbamate — PDTC) and selective ET<sub>A</sub> antagonist (LU 302146) in early caerulein AP in rats.

**Material and methods:** Among 50 Wistar rats with caerulein AP, 41 received PDTC 10 or 40 mg/kg, LU 302146 10 mg/kg or 20 mg/kg or PDTC 10 mg/kg with LU 302146 10 mg/kg or 20 mg/kg *i.p.*; 7 healthy rats were the only vehicle as a control (C). After 4 hrs of AP,

in 12 000 × *g* supernatants of pancreatic homogenates, the index of trypsinogen activation (%TA), lipase and plasma amylase was assayed.

**Results:** The %TA increased to 12.42 ± 2.14% in AP vs 1.96 ± 0.31% (*p* < 0.001) in C, lipase to 5.51 ± 0.84 U/mg vs 1.29 ± 0.11 (*p* < 0.001), amylase to 28.52 ± 5.61 U/mL vs 5.80 ± 1.38, (*p* < 0.01). A higher dose of PDTC attenuated a %TA to 3.01 ± 0.53% (*p* < 0.01) and amylase to 15.33 ± 1.38 (*p* < 0.05), whereas the effects of a lower dose were insignificant. An ET<sub>A</sub> antagonist, superimposed onto the lower dose of PDTC, attenuated the %TA to 4.44 ± 0.67 at a lower (*p* < 0.01) dose and to 1.56 ± 0.70 at higher dose (*p* < 0.001).

**Conclusion:** A lower dose of NF-K B activation inhibitor in concert with a selective ET<sub>A</sub> antagonist exerts favourable effects in early caerulein AP, not seen after their separate application. These positive cumulative effects may have some preventive implications against the progression of AP.

ID: 716

### LIVER FUNCTION IN CHOLECYSTECTOMIZED PATIENTS WITH ACUTE BILIARY PANCREATITIS

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The aim of the study was to compare the dynamics of serum levels of transaminases (ALT and AST) as well as the levels of alkaline phosphatase and gammaglutamyltranspeptidase in the course of the disease in two groups of patients with a mild form of acute biliary pancreatitis (ABP). The first group included 54 patients with "rescued" gall bladders (group — Ch), and the second one was composed of 15 patients who had previously undergone a cholecystectomy (*post* cholecystectomy group — P). Both groups underwent the same model of treatment with ERCP followed by an endoscopic sphincterotomy on the first day of hospitalization. We are aware that the question of the indication for these procedures, in patients with mild forms of acute biliary pancreatitis, is still debatable.

The level of measured parameters were insignificantly different. In these enzymes the same dynamics regarding time (decrease in time) were noticed in both groups. There were no differences in the duration of hospitalization between the groups. We discovered that the level of alkaline phosphatase could be a factor influencing the risk of once patients are discharged from hospital (Cox's regression model). We believe that an early endoscopic sphincterotomy should be performed on every patient who has previously undergone a cholecystectomy.

ID: 717

### BLOOD LEVELS OF PROINFLAMMATORY INTERLEUKINS AND ABSOLUTE ACCOUNTS OF PARTICULAR ELEMENTS OF WHITE BLOOD CELL SYSTEMS IN PATIENTS WITH DIFFERENT DEGREES OF SEVERITY OF ACUTE ALCOHOLIC PANCREATITIS

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**Background:** Proinflammatory cytokines play a fundamental role in local and systemic inflammatory responses in the initial stages of acute pancreatitis and in the development of severe forms of the disease.

**Material and methods:** We assessed the systemic release of proinflammatory cytokines and tried to characterize differences between patients with mild and severe forms of the disease. In this study, 35 patients with a mild form of acute alcoholic pancreatitis (MAAP) were compared with 11 patients with severe acute alcoholic pancreatitis (SAAP). Serum levels of TNF- $\alpha$ , IL-1 $\beta$ , IL-6, IL-8, and IL12p40 were measured every second day after admission for one week.

**Results:** The average level of IL-6 was significantly higher in patients with a severe form of acute alcoholic pancreatitis (*p* < 0.0332), which was dependent on time (*p* < 0.0197). Among the particular elements of white blood cell systems, only polymorphic neutrophils were significantly elevated over time in severe acute alcoholic patients as compared to those presenting the mild form (*p* < 0.0001).

**Conclusions:** We have hypothesized that in patients with acute alcoholic pancreatitis, the function of the phagocyte system, as well as the generation of the interleukins mainly by monocytes, are impaired.

ID: 788

## PANCREATIC TUMORS – COMPARISON OF INTRAOPERATIVE FNAB RESULTS WITH FOLLOW-UPS

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Resectability of the pancreatic tumors is estimated on the grounds of CT scans and later reestimated intraoperatively by surgeons. In our research we compare the outcomes of patients in which transduodenal FNAB was negative with those of patients whose cytological results were positive. Our study includes 54 patients who were hospitalized, because of a pancreatic head tumor, in the Chair and Department of General, Gastroenterological and Endocrinological Surgery in Poznań from the year 2000 to 2005. During a laparotomy a transduodenal FNAB was taken. Follow-ups were carried out by means of a questionnaire.

**Results:** All patients were divided into three groups: I (27) — in which malignant cells were not found, II (7) — in which atypical cells were found, III (20) — in which neoplastic cells were found. In Group I, in patients who had undergone radical surgery (4) the final histopathological examination revealed cancers of the duodenum and the pancreas. In Group II, open biopsies revealed malignancy, with 7 patients dying within 3 to 15 months and 2 of them dying within a period of 6 and 10 months, respectively. Within the III group of patients 1 died in 18 months after the proximal pancreaticoduodenectomies and the rest of the patients who underwent palliative surgery died within 3 to 10 months. The survival rate of the patients with positive results of FNAB and who had undergone palliative surgery was lower than in patients treated radically.

ID: 906

## SPECIFICITY OF CYSTS IN THE DISTAL PART OF THE PANCREAS

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In 1882, Carl Gussenbauer performed the first pioneering surgical procedure on the pancreas. He conducted an external drainage procedure of a pancreatic cyst which became the 'gold standard' procedure until the 1950s. Current imaging methods explicitly enable the diagnosis of pancreatic cysts but their management however, may lead to surgical difficulties. The aim of this study was to find the optimal method for the management of cysts of the distal part of the pancreas infiltrating the spleen, stomach as well as part of the left dome of the diaphragm or transverse colon mesentery. A total of 184 patients were operated on for diagnosed pancreatic pseudocysts from 1997–2004. 63 patients (34.2%) were diagnosed with cysts in the distal part of the pancreas. A cyst located at this particular site was known in our department as "Kubok's syndrome". The main symptom presented by patients was abdominal pain located in the middle and left epigastric regions with concomitant nausea and vomiting. Initially, all patients underwent a cycle of conservative treatment. Patients were randomly qualified for drainage procedures or pancreatic cyst resection procedures by the operating surgeon. Patients who underwent an earlier drainage or resection surgical procedure with cyst reoccurrence were an exception. An assessment of post-operative symptoms and early and late complications was made. The study group of patients operated on for cysts of the distal part of the pancreas infiltrating neighboring organs consisted of 51 male (81%) and 12 female (19%) patients aged between 35 and 65 years. A distal pancreatectomy with cyst resection and splenectomy was performed in 32 cases (51%), drainage or external marsupialization was conducted in 13 cases (20%), the Roux-en-Y anastomosis of the cyst with a loop of the small intestine was performed in 11 cases (18%) while the Duval procedure was performed in 1 case. An endoscopic drainage procedure involving the stomach was performed in 1 case. An exception was made concerning 5 patients (8%) who had undergone earlier drainage or external marsupialization surgical procedures and had had a reoccurrence during a period of 1–4 months following surgery. They were priorly qualified for an anastomosis of the wall of the cyst with the small intestine. Patients, who had had recurrent cysts following earlier pancreatic cyst surgery underwent an internal drainage procedure, which gives a total number of 18 (28%) internal drainage procedures of the distal part of the pancreas. The site of the cyst may in some cases force the surgeon to perform an "en-bloc" resection of the tail of the pancreas with the cyst and spleen. In the above-mentioned cases, the surgeon has to

be prepared for such eventualities. On the basis on the analysis of our study material, we conclude that the curative surgical procedure for a specific cyst of the distal part of the pancreas, infiltrating neighboring organs, is a resection procedure including, in most cases, a splenectomy.

ID: 905

## ABERRANT PANCREATIC TISSUE – INDICATIONS FOR SURGERY

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The pancreas lies transversally in the upper segment of the abdominal cavity, anteriorly to the vertebral column and posteriorly to the stomach, stretching between the spleen and the loop of the duodenum. The pancreas develops from 3 primordiums, dorsal and right and left ventral buds. The specificity of pancreatic tissue development is clinically significant regarding the stomach, the duodenum, the small intestine and colon and is known as aberrant pancreatic tissue. This split off pancreatic tissue may also encircle the duodenum leading to duodenal stenosis (ring pancreas). In most cases, aberrant pancreatic tissue is asymptomatic although may be responsible for gastro-enteric symptoms such as bleeding, gastric ulcers, pyloric stenosis, pancreatitis and even malignant degeneration. In 2005, in the Department of Gastrointestinal Surgery, there were two cases of diagnosed aberrant pancreatic tissue.

### Case 1

A 75 year old female patient was admitted to the Department of Gastrointestinal Surgery with a "carpet-type" ascending colon polyp diagnosed endoscopically with stage II adenoma histopathology. The patient was subsequently prepared for surgery. An additional intra-operative discovery in the jejunum was observed approximately 20 cm from the Treitz ligament and was a tumor (1 cm × 1.5 cm) on the external surface of the jejunal wall which macroscopically had the appearance of pancreatic tissue. Histopathological tests confirmed *pancreas aberrans*.

### Case 2

A 61 year old female patient was hospitalized in the Department of Gastrointestinal Surgery for an intramural lesion, measuring 20 × 10 × 13 mm, diagnosed in an abdominal CT in the prepyloric anterior wall of the stomach. Intra-operatively, due to the lack of neoplastic disease, a wedge gastric resection was performed. The post-operative period was uneventful. The histopathological diagnosis was *pancreas aberrans parietis ventriculi*. Aberrant pancreatic tissue presenting gastro-enteric symptoms is usually an accidental finding during a laparotomy in approx 0.2% of cases. A post-mortem examination diagnoses of aberrant pancreatic tissue in the upper segment of the abdominal cavity is made in 13% of cases. The most common sites of aberrant pancreatic tissue is the stomach (24–38%), duodenum (9–36%) and small intestine (0.5–27%). Acute pancreatitis in aberrant tissue may cause abdominal pain with elevated serum diastase and lipase levels. The malignant transformation of aberrant pancreatic tissue has been published but there still remain diagnostic difficulties especially in locating primary lesions in the small intestine. Most commonly, the indication for surgery is "symptomatic" aberrant pancreatic tissue which is presented in diagnostic imaging as an externally tumorous lesion or as an accidental finding during a laparotomy for other indications. On one hand, considering accurate diagnostics in asymptomatic patients and on the other hand, the minimal risk of malignancy in aberrant pancreatic tissue, conservative measures should be implemented and symptomatic management introduced.

ID: 803

## SOMATOSTATINOMA OF THE PANCREAS – DIFFICULTIES IN PREOPERATIVE DIAGNOSIS – A CASE REPORT

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This study presented a case of a 51-year-old male patient who underwent surgery due to somatostatinoma of pancreas. Somatostatinoma is the rarest neuroendocrine tumor of the digestive system. Despite many preoperative diagnostic examinations it was impossible to answer the question of histological type of the tumor preoperatively: benign or malignant. Surgical resection and immunohistochemical examination proved to be decisive. In most cases, the diagnosis of somatostatinoma is made after a surgical resection for a pancreatic tumor of unknown causes. Currently, the patient is under surgical ambulatory care, in good local and general condition. Key words: somatostatinoma, neuroendocrine tumors of pancreas, gastroenteropancreatic neuroendocrine tumors — GEP-NET

ID: 908

**ORAL NUTRITION IN ACUTE PANCREATITIS**

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**Aim of study:** This study presents the time of the inclusion of oral nutrition as a prognostic factor in the management of acute pancreatitis. Views on nutrition in acute pancreatitis have been radically changing lately. It is said that oral nutrition should be introduced within 48 hours from admission to hospital if motoric function of digestive tract has been preserved.

**Material and methods:** From 2002 to 2004, 162 patients (women 57 — average age 51.1, men 105 — average age 47.2) were hospitalized in Division and Clinical Department of General Surgery at the Regional Specialized Hospital no. 1 in Tychy due to acute pancreatitis. The average time of hospitalization was amounted to 13.67 days. In a group of 120 patients oral nutrition was included between the 2<sup>nd</sup> and 4<sup>th</sup> day of hospitalization.

**Results:** The following dependences were observed:

Time of inclusion of oral nutrition (in days)	Number of patients	Average score on Ranson scale	Average time of hospitalization (in days)
2	41	1.75	7.65
3	68	2.15	11.57
4	11	2.65	20.45
> 5	31	4.5	25.6

In the above-mentioned group deaths were not observed. Death as a complication of acute pancreatitis appeared in 11 cases, occurring on average, on the 19<sup>th</sup> day of hospitalization (from the 2<sup>nd</sup> to the 72<sup>nd</sup> day). The average age of these patients was amounted to 58.85 years (from 33 to 79 years), average score on the Ranson scale was 4.5. Total parenteral nutrition was administered in 6 cases. 5 patients died before parenteral nutrition was administered. In 1 patient who subsequently died, oral nutrition as an addition to parenteral nutrition was introduced on the 15<sup>th</sup> day.

**Conclusions:**

1. The usage of oral nutrition does not have a negative influence on the course of acute pancreatitis
2. The possibility of the inclusion of oral nutrition is an important prognostic factor in the management of acute pancreatitis.

ID: 919

**PSEUDOANEURYSMS OF THE PERIPANCREATIC ARTERIES IN PATIENTS WITH CHRONIC PANCREATITIS**

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Pseudoaneurysms of the peripancreatic arteries are rare but very serious complications of chronic pancreatitis.

The aim of this study was to investigate the diagnostic and treatment methods used on 6 patients with pseudoaneurysms of the peripancreatic arteries and chronic pancreatitis hospitalized in the Department of General, Gastroenterological Surgery and Nutrition of the Medical University of Warsaw. In this paper we analyze the symptoms, location, diagnostic methods, treatment and complications of pseudoaneurysms. Seven patients (5 F, 2 M) ranging in age from 37 to 70 years (median age, 53) were hospitalized due to abdominal pain (5 patients) and bleeding from the gastrointestinal tract (2 patients). Diagnostic procedures performed (CT, AngioCT, arteriography, Doppler USG) revealed the presence of pseudoaneurysms of the splenic artery in 3 patients, the gastroduodenal artery in 1 patient, the pancreaticoduodenal arteries in 2 patients and the left gastric artery in 1 patient. Four patients were treated primarily by intravascular embolization, which was successful in only 2 patients, although one of these patients had to be operated on because of an abscess in pseudoaneurysm cavity. All of the patients, except two (the first did not give the permission for surgery while the second had a pseudoaneurysm as a result of a thermoablation of a pancreatic tumor) were treated surgically. In each case a ligation of the artery was performed,

together with a splenectomy in 2 patients. In 1 case a pancreaticoduodenectomy had to be performed. Among from the patients who underwent operation, postoperative complications occurred in 1 case, which was septic bleeding from the splenic artery.

Pseudoaneurysms of the peripancreatic arteries are a difficult to diagnose complication of chronic pancreatitis. Treatment by use of intravascular embolization, which is recommended by most authors, was not very effective in our study. In 85% of our patients, successful treatment was achieved by use of surgical methods.

ID: 918

**RADIOFREQUENCY ABLATION OF UNRESECTABLE PANCREATIC TUMOURS — A PILOT STUDY**

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**Background:** Radiofrequency ablation (RFA), a thermal coagulation technique, has been mainly used for the ablation of primary and secondary liver tumours. Many surgical units have the equipment and the experience in the ablation of unresectable liver tumours and as RFA increasingly becomes an accepted component of hepatobiliary practice it may be more widely used, especially in patients with unresectable pancreatic tumours.

**Material:** A preliminary assessment of RFA utility in the treatment of unresectable pancreatic tumours.

**Methods:** 2 patients, with a diagnosed pancreatic tumour, underwent an intra-operative RFA due to the presence of an unresectable lesion. Ablation was done using a Model 1500X Electrosurgical Radiofrequency Generator, RITA Medical Systems; California, USA.  
**Results:** Both patients are alive (a follow-up of 4 and 5 months). Abdominal CT scans, performed a month after the RFA procedure, showed no clinically significant progress of the disease; a CT scan of one patient revealed a procedure-related complication — a 3.5 cm pseudoaneurysm of the pancreatic corpus, which was successfully obliterated using embolization coils.

**Conclusions:** RFA is a safe and seemingly promising technique for the treatment of unresectable pancreatic tumours. Further studies are still needed.

ID: 917

**SEVERE HEMORRHAGIC COMPLICATIONS IN CHRONIC PANCREATITIS (CP)**

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**Background:** An evaluation of the treatment of severe hemorrhagic complications in patients with CP.

**Material and methods:** 11 patients (5 F and 6 M; mean age 51) were treated because of hemorrhagic complications directly related to CP, between 1999 and 2006.

**Results:** The clinical presentation was: severe pain — 8 cases, gastrointestinal bleeding — 2 cases, intraperitoneal bleeding — 2 cases. Pseudoaneurysm was diagnosed in 9 patients and a ruptured pancreatic pseudocyst in 2 patients. Pseudoaneurysm involving the splenic artery — 6 cases; the pancreaticoduodenal artery — 1; the left gastric artery — 1; the gastroduodenal artery — 1. Three patients underwent embolization of which one was successful. All patients were operated on, including a patient who had undergone an effective embolization having been operated on due to a pancreatic abscess. The following procedures were performed: ligation of the artery supplying the pseudoaneurysm — 4; cystogastrostomy — 2; coligation of the ruptured cyst — 2; distal pancreatic resection — 1; pancreaticoduodenectomy — 1; drainage of the pancreatic abscess — 1. Four patients underwent reoperation because of bleeding during the postoperative period. In 1 case reoperation was caused by evisceration. Two pancreatic fistulas and 1 intestinal fistula were successfully treated conservatively. There were no postoperative deaths.

**Conclusion:**

1. The majority (82%) of severe hemorrhagic complications of CP is caused by pseudoaneurysm.
2. Minimally invasive treatment is usually not sufficient.
3. Surgical treatment is effective, but the complication rate is still high (64%).



ID: 916

### EARLY RESULTS OF PANCREATODUODENECTOMY IN ONE HUNDRED CONSECUTIVE PATIENTS WITH MASS IN HEAD OF PANCREAS AND PERIAMPULLARY TUMORS

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**Background:** An assessment of the immediate results of the radical surgical treatment of tumors of the pancreatic head.

**Material and methods:** This study comprised of one hundred consecutive patients (52 M; 48 F) who underwent a pancreatoduodenectomy between 1998 and 2003. Whipple's procedure was performed in 87 patients and a pylorus-preserving (Traverso-Longmire) procedure was performed in 13 patients combined with a regional lymphadenectomy in cases of neoplastic disease. The indications for resection was: pancreatic cancer — 45 cases; cancer of the ampulla of Vater — 34 cases; chronic pancreatitis — 14 cases; a benign tumor of the ampulla — 2 cases; endocrine pancreatic tumor — 1 case; CBD cancer — 1 case; cystadenoma of pancreas — 1 case. The morbidity and mortality rate was assessed over 30 postoperative days or until the patient was discharged from hospital. The histopathology report was assessed regarding tumor diameter, the margin of resection and lymph node involvement and concerning the influence on the immediate results of the treatment.

**Results:** The postoperative course was uneventful in 48 patients. 52 patients had one or more complications. The most common complications were: delayed gastric emptying — 30 patients; wound infection — 21 patients; abdominal collection — 5 patients; pancreatic fistula — 5 patients; postoperative bleeding — 2 patients. Eight patients required re-operation. One patient died.

**Conclusion:** 1. Pancreatoduodenectomy is the procedure of choice in patients with a mass in the head of the pancreas. 2. Pancreatoduodenectomy is a safe procedure in a high-volume center.

ID: 913

### SURGICAL TREATMENT OF CANCER OF THE PANCREAS IN 428 PATIENTS

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Pancreatic cancer (PC) is a malignant neoplasm of the digestive system which possesses both the worst prognosis and the highest mortality. Advances in pancreatic cancer diagnostic methods have not changed the fact that most of the patients arrive at a hospital in the late stages of the disease, when possibility of carrying out a resection is much lower. The aim of this study is to present our own experience in the diagnostic and surgical treatment of pancreatic cancer. In the years 1983 to 2005 at the First Department of General and Endocrinological Surgery, Medical University of Białystok, 428 patients with cancer of the extrasecreting part of the pancreas were treated. Among them there were 261 (61%) males and 167 (39%) females of ages 26 to 88 (av.61). In 289 (67.5%) cases the primary cancer focus was localized in the head of pancreas, in 111 (26%) cases in the trunk and 28 (6.5%) cases in the tail. The diagnosis was based on the clinical view, the results of biochemical analysis, the neoplastic marker level and imaging examinations (ultrasonography, EUS, CT, ECPR, MRI, intraoperative ultrasonography, specular imaging of bile and pancreatic duct). 418 patients of the original 428 underwent operation. Surgical management depended on the localization and advancing state of the tumor. In 54 (13%) patients a partial or total resection of pancreas was possible with post-operative chemotherapy given to 46 of them. In 251 (60%) cases palliative procedures were performed while in 113 (27%) only a laparotomy and biopsy of pancreas was carried out. Chemotherapy was given to 192 and 55 patients respectively. The UICC (pTNM) classification was used to show the grade of neoplastic process. Based on our own observations we found that despite the advances in new diagnostic methods which allow one to detect the early stages of pancreatic cancer, the low rate of resections is caused mainly by an uncharacteristic clinical view in the early stages of the disease and the lack of specific screening examinations.

ID: 912

### RISK FACTORS OF PANCREATIC CANCER

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The etiology of malignant neoplasms of the pancreas (PC) is still unclear. However, there are several risk factors that seem to be related to this disease, such as; smoking, drinking alcohol and/or coffee as well as an improper diet. The co-existence of PC with other diseases has also been observed, such as: chronic pancreatitis, diabetes, gall-stones and previous partial resection of stomach. In the years 1983 to 2005 at the First Department of General and Endocrinological Surgery, Medical University of Białystok, 428 patients with cancer of pancreas were treated. Among them there were 261 males and 167 females ranging in age from 26 to 88 (av.61). In 18 patients (4.2%) chronic pancreatitis was found, with stomach ulceration in 87 (20.3%), gall-stones in 46 (10.7%) and diabetes in 55 (12.8%). Ten patients had previously undergone a stomach resection (2.3%), of whom 4 had had a resection due to stomach cancer. 211 (49.3%) patients treated due to pancreatic cancer were smokers (10–40 cigarettes per day during the period of 5 to 30 years), 148 (34.5%) abused alcohol and 221 (51.6%) used to drink too much coffee (2–5 cups per day). The etiology and pathogenesis of pancreatic cancer are still unclear and require further clinical studies. The authors' observations, as well as the others from the world, suggest that pancreatic cancer is strictly related to certain diseases as well as to alimentary habits.

ID: 911

### ENDOSCOPIC TREATMENT IN THE MANAGEMENT OF CHRONIC COMPLICATIONS OF PANCREATITIS

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**Background and aims:** Endoscopy seems to offer an alternative to the surgical treatment of cholestasis, pseudocyst and pain relief in chronic pancreatitis (CP) patients. The aim of the study was to evaluate the efficacy of endoscopy regarding these complications in CP. **Material and methods:** Thirty patients (20 men and 10 women) with CP, hospitalized between 2003–2005, were included into the study. In 14 cases, cholestasis (mean bilirubin serum level;  $4.5 \pm 1.6$  mg/dl) was found, while 4 patients presented a pancreatic pseudocyst (mean diameter was  $90 \pm 19$  mm). In 22 patients a sphincterotomy was performed and a prosthesis inserted: in 11 of these cases - into the common biliary duct (CBD), in 8 — into the pancreatic duct (PD) and in 3 — into both the CBD and PD. In 4 patients with no PD stricture, only a pancreatic sphincterotomy was undertaken. Four cases of pancreatic pseudocysts were qualified to undergo endoprosthesis insertion. Drainage holes were opened in 4 patients (1 transgastral, 1 transduodenal, 2 presenting PD).

**Results:** Pain relief was achieved within 24–48 hours after the endoscopic procedure in all the examined patients. Normalization of the cholestatic biochemical values was observed within 2 weeks after endoscopic treatment. There has been no recurrence of pancreatic pseudocysts. No complications after endoscopic treatment of CP have been observed.

**Conclusion:** Endoscopic treatment of the complications of CP is an effective and safe procedure and can be provided as an alternative treatment to surgery.

ID: 910

### LABORATORY PARAMETERS IN EVALUATION OF PRO- AND ANTIOXIDATIVE STATE DURING COURSE OF ACUTE PANCREATITIS — COGNITIVE ASPECT OR A NEW PERSPECTIVE ON CLINICAL PRACTICE?

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The studies which have been carried out by many Polish and foreign authors attribute an important role in pathogenesis and the course of acute pancreatitis (AP) to reactive oxygen forms (ROF), which are responsible for triggering so-called oxidative stress.

The aim of this report is to analyze individual parameters determining the pro- and antioxidative states in the context of the severity and subsequent course of the disease. This analysis is based on the literature presenting clinical research results involving human subjects and the author's own preliminary research performed on subjects suffering from mild AP.

The intensity of the prooxidative processes during the course of AP was determined using the following blood and urine laboratory parameters; malonic aldehyde (MDA), lipid peroxides, conjugated dienes, Schiff bases, lipofuscin concentrations as exponents of lipid peroxidation; carbonyl groups in proteins as the marker of their oxidation; myeloperoxidase triggering the production of hypochlorous acid anion; superoxide anion radical as well as hydrogen peroxide.

The evaluation of antioxidative processes was determined using following parameters; enzymes such as: superoxide dismutase (SOD), glutathione peroxidase, catalase; vitamins or their precursors: A, beta-carotene, C, alpha-tocopherol; other compounds: glutathione, lutein, lycopene, selenium, ceruloplasmin as well as the total antioxidative status.

The most often used and the best prooxidative processes intensity indicator in the course of mild and severe AP is MDA concentration, which increases from 15 to 126 percent in mild AP and from 6 to 580 percent in the severe form of AP, compared to the concentration of this compound in healthy subjects. The increase of MDA concentrations was also observed in author's own preliminary research.

SOD and vitamins most often determined the process of the evaluation of antioxidative processes. Analyzed reports unambiguously demonstrate a decrease in vitamin concentrations of 4 to 70 percent in the mild form and between 8.5 and 81 percent in the severe form, in comparison to healthy subjects. The results of SOD determination are ambiguous; that is, both increases and decreases of values were observed when compared to healthy people.

Evaluating oxidative stress has so far remained mainly the subject of scientific investigations. However, further studies may reveal some parameters useful for disease severity assessment, which may become an important aspect of clinical practice

ID: 909

## DRAINAGE OF ABSCESSES AND CYSTS OF PANCREAS UNDER ULTRASONIC CONTROL

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**Aim of study:** This study presents the effectiveness and efficiency of the drainage of pseudocysts and cysts of the pancreas under ultrasonic control during acute pancreatitis.

**Material and methods:** From 1985 to 2004, 103 patients were hospitalized in Division and Clinical Department of General and Vascular Surgery at the Regional Specialized Hospital no. 1 in Tychy due to pseudocyst or abscesses of the pancreas. Pancreatic abscess was confirmed in 36 patients. In the remaining 67 patients, pseudocysts were confirmed. Percutaneous drainage, as a method of treatment of pancreatic liquid cisterns, was indicated when the cistern was bigger than 4–6 cm in diameter and did not have the tendency to show idiopathic resorption. Drainage operations were conducted under operating room conditions using a linear probe of 3.5 MHz and "Cavafix" CH 18, "Nephrofix" 10–15 or "Cystofix" 10–15 sets.

**Results:** Recovery resulting from percutaneous drainage was obtained in 33 of 36 (91.7%) patients with pseudocyst of the pancreas and in 60 of 67 (89.5%) patients with abscesses of pancreas. The average time of drainage was amounted to 19.25 days for pseudocysts and 30.2 days for abscesses of the pancreas. Six patients with pseudocysts and three patients with abscesses of the pancreas required operational treatment in cases of inefficiency of drainage. The most frequent complication was infection of pseudocysts, which occurred in 12 patients (17.9%).

**Conclusions:** In a number of cases, drainage of pancreatic pseudocysts and cysts under ultrasonic control can be an alternative to surgery. This method is highly recommended as it is less invasive, improves the patient's quality of life and reduces the cost of treatment.

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