variables available at one year follow-up did not improve the nomogram. The nomogram outperformed the UICC 7th edition staging system.
Conclusions: A robust gastric cancer nomogram was developed, with the unique ability of predicting improved survival for patients alive at time points after surgery. Introduction of variables available at one year after resection did not further improve this nomogram. This might be caused by the limited availability of follow-up data, as well as by the already strong predictive accuracy of the baseline variables. For individual patient prognosis, the nomogram should be the preferred choice over the UICC staging system.

6634 POSTER

5-year Experience in Diagnosis and Treatment of Neuroendocrine Tumours

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Background: Although neuroendocrine tumours (NETs) are considered rare tumours, there are several reports of increasing incidence and evolving treatment of NETs. The aim of this prospective study was to describe clinical characteristics and treatment outcomes of NETs diagnosed at Iran Cancer Institute between 2003–2009.
Material and Methods: All 185 NETs were documented with central pathology-immunohistochemistry review according to WHO criteria. Choosing medical therapy including somatostatin analogue (LAR), interferon-alfa or chemotherapy was based on WHO grading system. Cox-regression analysis was used to find independent factors of better survival.
Results: Median age of the patients was 51 and 85 were women (45.9%). The most common sites of disease were unknown primary (31), stomach (19) and small intestine (17). There was a 43.2% primary pathologic diagnosis of NETs. Others were diagnosed as poorly differentiated carcinoma, adenocarcinoma or small round-cell tumours at first. Although only 32% of the patients had localized NET, 50% underwent curative surgery even with regional or metastatic disease. Overall 5-year survival was 38% (68% for carcinoid tumours). Median survival was 100 months by using combination of LAR and interferon in low and intermediate grade advanced tumours, compared to 52 months for LAR or 16 months with interferon alone.
Conclusion: The increased use of more sensitive and specific neuroendocrine tumour markers now identified poorly differentiated NETs, which changed the prevalence and site distribution of disease. Despite advanced stage, surgery played a major role in treatment of our patients. A combination of LAR and interferon has been very effective in patients with advanced disease.

6635 POSTER

Molecular Prognostic Factors in Gastric Cancer

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Background: The depth of tumour invasion, primary tumour histology, lymph node status, stage are generally used as routine prognostic factors in gastric cancer. In this study we've investigated molecular markers which can possibly predict high risk of a tumour progression in gastric cancer.
Materials and Methods: To evaluate the relationships of immunohistochemical expression of MMP-2, MMP-9, E-cadherin, β-catenin, c-erbB-2, EGFR with prognosis of gastric adenocarcinoma patients (n = 91), who underwent curative surgery at Khabarovsk Oncology Center.
Results: The reduced membrane expression of the adhesion?s protein E-cadherin was demonstrated in 61 (67.0%) gastric carcinomas and correlated negatively only with lymph node metastases (p = 0.024). In 46 tumours (50.5%) the β-catenin overexpression (another protein of adhesion) has been found. The β-catenin overexpression was associated with depth of tumour invasion (p < 0.001), lymph node metastases (p < 0.001) and advanced stage (p < 0.001). There was no correlation between expression of E-cadherin and β-catenin and 3-year disease free and overall survival (p = 0.416, p = 0.330 and p = 0.156, p = 0.438). 46 cases (50.5%) showed the matrix metalloproteinases-2 (MMP-2) overexpression. The MMP-2 overexpression was associated with depth of tumour invasion (p = 0.002), lymph node metastases (p = 0.003) and advanced stage (p = 0.002). Hyperexpression of the MMP-9 has been found in 50 (54.9%) gastric carcinomas. MMP-9 expression correlated with advanced stage (p = 0.004), depth of invasion (p < 0,001). There was no correlation between expression of MMP-2 and 3-year disease free and overall survival, but hyperexpression of MMP-9 was associated with poor 3-year disease free survival and overall survival (p = 0.008, p = 0.003). The membrane hyperexpression of the epidermal growth factor 2 type (c-erbB-2 or Her-2/neu) has been observed in 31 patients (34.1%). In 19 (20.9%) patients the EGFR membrane hyperexpression (the epidermal factor of growth 1 type or c-erbB-1) has been found. The c-erbB-2 and EGFR overexpression were associated with depth of tumour invasion (p = 0.009, p = 0.025), lymph node metastases (p < 0.001, p < 0.001) and advanced stage (p < 0.001, p = 0.003). There was no correlation between expression of c-erbB-2 and EGFR and 3-year disease free and overall survival (p = 0.999, p = 0.796 and p = 0.864, p = 0.669).
Conclusions: Stomach cancer is an immunohistochemical heterogeneous tumour, but the overexpression of MMP-9 is the only one which can predict 3-year disease free survival and overall survival, and so can be a possible target for therapeutic agents.

6636 POSTER

Pancreatic Exocrine Insufficiency in Advanced Pancreatic Cancer – Fecal Elastase-1 (FE-1) Value Is a Strong Independent Predictor of Poor Survival

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Background and Aims: Pancreatic exocrine insufficiency (PEI) can be diagnosed with high accuracy by the measurement of fecal elastase-1 (FE-1). The relationship between prognosis of advanced pancreatic cancer (PC) and PEI is unknown. Aim of the present study is to investigate a possible correlation between FE-1 value and survival in patients with advanced pancreatic cancer (PC).
Methods: A prospective observational non-randomized study was conducted at our institution between 2007 and 2009. All patients with an unresectable PC were enrolled. FE-1 was measured in all the subjects at the admission. PEI was considered "absent" when FE-1 was greater than 200 mg/gram, "moderate" if FE-1 was 100–200 mg/gram, "severe" if FE-1 was less than 100 mg/gram and "extremely severe" if FE-1 was less that 20 mg/gram. Univariate and multivariable analyses were performed.
Results: During the study period 194 patients with unresectable PC were enrolled. The median value of FE-1 was 204 mg/gram (IQR 19; 489 mg/gram). In 97 patients (50%) FE-1 value was >200 mg/gram. Overall, 48 (25%) had an extremely severe PEI, 28 (14%) had a severe PEI and 21 (11%) had a moderate PEI. Patients with extremely severe PEI had a higher incidence of albumin values <40 g/L (44% versus 29% versus 14%, $P < 0.01$), a higher distribution of pancreatic head localizations (96% versus 73.5% versus 59%, $P < 0.01$). a higher rate of jaundice (70% versus 37% versus 34%, $P < 0.01$). The median overall survival was 10.5 months. Patients with FE-1 $\leqslant$30 mg/gram had a significantly worse prognosis (median survival of 7 months versus 11 months, $P = 0.031$). By multivariable analysis, the presence of metastases (HR 1.81, $P < 0.0001$), hemoglobin $\leqslant$12 g/L (HR 2.12, $P = 0.001$), albumin $\leqslant$ 40 g/L (HR 1.64, $P = 0.010$) and FE-1 $\leqslant$20 μg/gram (HR 1.59 $P = 0.023$).
Conclusions: For the first time we demonstrated that a low value of FE-1 is strongly correlated with poor survival in patients with advanced pancreatic cancer. Further studies are needed to investigate a potential role of enzyme replacement therapy in patients with advanced pancreatic tumours.

6637 POSTER

Rehabilitation for Patients With Uppergastrointestinal or Gynaecological Cancers – the Patient's Perspective

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Objectives: This study investigated patient's experiences of rehabilitation needs following treatment for gynaecological (GYN) or upper gastrointestinal (UGI) cancer.
Methods: Participants were recruited to focus groups from consecutive outpatient clinics at a UK cancer centre. These were audiorecorded, transcribed verbatim and continued until data saturation was reached and confirmed (at the fifth group). Data were collected and analysed using grounded theory and coded independently by two researchers.
Results: Thirty-three men and women who had completed treatment participated in the groups from July to October 2010. A core theme of "seeking a new normality" was evident throughout the research. Four key

themes emerged: Impact on the person, adjustment, external support and tailored individualised information. Participants explored how these factors assisted or hindered their recovery and what affected recovery. Participants not on a surgical pathway, those with shorter hospital stay, or outpatient care only, had less understanding of the need for, or availability of, rehabilitation services. Those who had longer hospital stays, i.e. the UGI patients, had better contact with rehabilitation professionals, especially physiotherapists and dietitians. Participants without Allied Health Professional (AHP) support reported a "drop-off" in professional support following treatment. Those with AHP support did not. Participants with GYN cancers accessed fewer rehabilitation services, expressed more psychosocial impacts and concerns regarding returning to work. Their younger median age and genders may explain some of those differences. It was often unclear to participants with unmet needs where to get guidance and help. Service inequalities were also identified; those treated as private patients received less inpatient and outpatient rehabilitation. Many participants felt that there were less services and support readily available than for others with more common cancer types. Most participants wanted individualised guidance to self-manage consequences of cancer and treatment rather than return to hospital for treatment.
Conclusions: Participants in this study reported seeking a new normality. Those who had contact with AHPs during treatment were more likely to feel supported and less likely to report unmet needs. These results will inform a future intervention study exploring the provision of individualised guidance at the end of treatment.

6638 POSTER

Medical Utilization and Cost of Liver Cancer in Taiwan

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Background: Taiwan implemented a comprehensive and universal National Health Insurance (NHI) program to cover all inhabitants. This study aimed to assess the medical utilization and cost of liver cancer patients under NHI in Taiwan.
Methods: This retrospective cross-sectional study used a sampled NHI research database containing one million beneficiaries. Claims of liver cancer patients in 2009 were analyzed.
Results: Among 2335 liver cancer patients identified, 2178 (93.3%) patients used outpatient services and 1193 (51.1%) patients used inpatient services. Liver cancer accounted 1.8% of the total cost of NHI. The cost per visit was $59.3 for outpatient and $2070.3 for inpatient. The annual cost per patient was $4746.6, with $1951.0 for outpatient and $2795.6 for inpatient. Patients who were female, age at 60's, lower income, living in Southern Taiwan, had higher cost per patient ($p < 0.0001$). Fees for consultation, treatment and medical supply (57.3%) accounted for the highest portion of outpatient cost, followed by drug fees (30.0%), and diagnosis fees (11.2%). Ward fees (19.0%) accounted for the highest portion of inpatient cost, followed by drug fees (18.7%), X-ray fees (14.9%). Private hospitals were visited most frequently.
Conclusions: The cost of liver cancer care is substantial and varied by sex, age, income, and geographic distribution. It is critical to identify cost-effective treatment strategies.

6639 POSTER

Polymorphisms Associated With the Clinical Outcome of Biliary Tract Cancer (BTC) Patients Treated With the Epirubicin, Cisplatin and Capecitabine (ECX) Regimen

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Background: Biliary tract cancers (BTC) are rare but highly fatal malignancies, and most chemotherapeutic agents have disappointing efficacy against these tumours. Our previous phase II study showed that combined locoregional and systemic chemotherapeutic regimen was active and safe, with results similar to the gemcitabine-platinum regimen (Cantore et al., Cancer 2005; Valle et al., N Engl J Med. 2010), but predictive factors for maximizing therapeutic efficacy are warranted. Therefore, this study was aimed at evaluating the association of polymorphisms in key genes with outcome of BTC patients (pts) treated with intraarterial cisplatin and epirubicin, and oral capecitabine (ECX) regimen.
Materials and Methods: We evaluated 5 polymorphisms in 4 genes (ERCC1, XPD, XRCC1 and TS) in 75 unresectable BTC pts treated upfront with ECX. Univariate/multivariate analyses compared clinical (age, sex, performance status (PS), CA19.9, cycle numbers) and genetic parameters with clinical response, overall and progression-free survival (OS, PFS).
Results: Patients harbouring a higher number of repeats in the TS promoter enhancer region (e.g., TSER 3R3R or 2R3R) experienced a significantly lower rate of clinical benefit (54 vs. 80%, $P = 0.03$) and shorter OS ($P = 0.001$, with median OS of 6.7, 9.0 and 19.3 months in pts with TSER 3R3R, 2R3R and 2R2R genotypes, respectively). CA19.9 levels above 100 U/ml were also associated with lower rate of clinical response and shorter OS, while no correlations were observed for all the other parameters. TSER polymorphic variants and CA19.9 remained as independent predictors for death-risk at Cox multivariate analysis, with HR = 0.440, 95% CI, 0.237–0.818 for 2R2R vs. 2R3R/3R3R pts ($P = 0.009$).
Conclusions: TSER polymorphisms have been already associated with differential outcome in cancer pts treated with fluoropyrimidine-based regimens, but this is the first evidence about their predictive role in BTC pts treated with ECX regimen. Since BTC are such a dismal disease, any biomarker that can help to better stratify patients might have crucial clinical applications. The validation of the role of these polymorphisms in well-planned prospective trials will offer new tools for optimization of currently available treatments in selected patients.

Oral Presentations (Sun, 25 Sep, 09:00−10:20)
Genitourinary Malignancies − Prostate Cancer

7000 ORAL

Final Overall Survival (OS) Analysis of COU-AA-301, a Phase 3 Study of Abiraterone Acetate Plus Prednisone in Patients With Metastatic Castration-Resistant Prostate Cancer (mCRPC) Pretreated With Docetaxel

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Background: Abiraterone acetate (AA) is a selective androgen biosynthesis inhibitor that blocks the action of CYP17, thereby inhibiting adrenal and intratumoral androgen synthesis.
Materials and Methods: COU-AA-301 is a randomised, double-blind study of AA (1000 mg + prednisone [P] 5 mg po BID) vs placebo + P administered to men with mCRPC progressing post-docetaxel. 797 patients were randomised to AA and 398 to placebo. OS was the primary end point. At a preplanned interim analysis, AA improved OS (de Bono, ESMO 2010). The present report describes the final OS analysis at 775 events (prior to crossover from placebo to AA).
Results: At median follow-up of 20.2 mos, OS for the AA + P group was superior to the placebo + P group [median OS 15.8 vs 11.2 mos; HR = 0.74 (0.64–0.86), $p < 0.0001$]. The difference in median OS between the 2 groups improved to 4.6 mos from 3.9 mos (interim analysis). Mean duration of treatment was 10.1 cycles AA vs 6.7 placebo. Subgroup analyses for OS are presented in the table.

		Median OS (mos)			
Baseline variable	Subgroup	AA	Placebo	HR	95% CI
All subjects		15.8	11.2	0.74	0.64–0.86
Brief Pain Inventory-worst pain (BPI-SF)	<4	18.4	13.9	0.69	0.56–0.85
	⩾ 4	13.3	9.3	0.78	0.63–0.96
Prior regimens	1	17.1	11.7	0.71	0.59–0.85
	2	14.2	10.4	0.80	0.61–1.03
Type of progression	PSA only	18.3	13.6	0.63	0.47–0.84
	Radiographic	14.8	10.5	0.78	0.65–0.93
Age, y	<65	15	11.2	0.69	0.53–0.91
	⩾ 65	16.2	11.1	0.76	0.63–0.90
	⩾ 75	15.6	9.3	0.64	0.48–0.85
Visceral disease at entry	Yes	12.9	8.3	0.79	0.59–1.05
	No	17.1	12.3	0.69	0.58–0.82

AA was well tolerated. Mineralocorticoid-related adverse events were more common with AA vs placebo. Grade 3/4 hypokalaemia (4.4% vs 0.8%), and grade 3/4 hypertension (1.3% vs 0.3%) were infrequent. Liver function test