study, we aimed to form a risk model in patients with common cancers by also questioning the role of various biochemical markers in this regard.
Materials and Methods: During a period of 8 months between May 2010 and January 2011, consecutive patients were prospectively recruited from 2 tertiary cancer centers. Ethical committee approval was obtained prior to onset of the study. Patients only with breast, colorectal and lung cancers, and all stages of disease, were allowed. Data on disease and treatment characteristics as well as comorbidities, global quality of life scores as assessed by EORTC QLQ-C30 questionnaires, biochemical and hematological parameters (serum creatinine, Lactate Dehydrogenase, creatinine, ALT, albumin, hemoglobin, monocyte, neutrophil, lymphocyte, thrombocyte counts, mean platelet volume, and C reactive protein levels (CRP)), and Granulocyte Colony Stimulatory Factor (GCSF) usage were collected. Patients were carefully observed for the development of FN after each chemotherapy cycle. Univariate and multivariate logistic regression tests are conducted to test the determinants of FN.
Results: A total of 1139 patients were recruited and 3970 cycles were delivered during the study period. The number of cycles delivered for patients with breast, lung and colorectal cancers are 1608 (40.5%), 1023 (25.8%), and 1339 (33.7%), respectively. In total, 59 episodes of FN (after 1.5% of total cycles) in 53 patients are encountered. Mortality occurred in only one case after FN (~2% mortality in patients with FN). As, type of cancer was associated with the risk of FN (lung cancer versus breast and colorectal cancer), data was separately analyzed for these 2 groups. In patients with breast and colorectal cancers, the independent predictors of FN were cycle of chemotherapy (Exp(B) = 0.8, P = 0.045), gender (Exp(B) = 5.2, P = 0.030) and previous history of FN (Exp(B) = 282.5, P < 0.001). On the other hand, in patients with lung cancer, the independent determinants were the site of chemotherapy administration (inpatient versus outpatient, Exp(B)=52.6, P = 0.001), CRP levels (Exp(B) = 3.1, P = 0.038), and again, previous history of FN (Exp(B) = 81.6, P < 0.001).
Conclusions: In patients with common cancers and in daily practice, type of cancer is important as different predictors of FN seem to be influential. Notably, CRP levels and gender appear to be predictive. Some of the predictors from this study are novel, and can well help stratify patients according to their FN risk. We are working to produce a handy nomogram to be used by the clinicians. In addition, we are starting to test our model in a new cohort of patients for validation purposes.

3016 POSTER

Clinical Differences of Opioids in Cancer Pain not Responding to Fentanyl Escalation

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Background: Basically morphine, oxycodone and fentanyl are considered to have similar therapeutic efficacy against cancer pain, however we often experience different pharmacological responses between these opioids. Few patients obtain insufficient analgesic response despite the dose escalation of fentanyl. The aims of this study were describe patients with poor analgesic responses and to evaluate the efficacy of opioid rotation from fentanyl to other opioid.
Methods: This was a retrospective chart review in 224 patients who requested consultation with the palliative care team at the Teikyo Oncology Center in Tokyo from Jan. 2010 to Dec. 2010, including 20 patients were administered fentanyl. Four patients were enrolled with poorly controlled cancer related pain [worst pain severity rated as 7 or greater on the Numeric Rating Scale (NRS)] and required opioid rotations (OR). They did not have any cancer therapies and medications concerning to reduce their pain within two weeks. Pain intensity, safety profile and opioid daily dose at baseline and after opioid rotation were evaluated on each patient.
Results: Pain intensity measured with NRS was markedly decreased after opioid rotation in every patient. Effective daily doses were varied from 6 to 50% lower than general equianalgesic doses of fentanyl.
Conclusions: These results showed opioid conversion ratio varies widely and suggest fentanyl-induced hyperalgesia and tolerance. Opioid rotation is considered the effective method to improve refractory pain, but the conversion dose should be titrated carefully based on opioids condition.

Patient	Fentanyl				Opioid rotation (OR)			
	Dose	Route	Adjuvant analgesics	Duration	NRS pre OR	Opioid post OR	Dose of opioid post OR	NRS post OR
1	67 μg/h (iv)	iv	ketamin	10d	8	Morphine (oral)	30 mg	0
2	100 μg/h (td)	td	pregabalin	2M	9	Morphine (oral)	120 mg	2
3	300 μg/h (td)	td	gabapentin	3M	8	Oxicodone(oral)	30 mg	0
4	100 μg/h (td)	td	gabapentin	2M	8	Morphine (iv)	10 mg	1

iv: intravenous; td: transdermal.

3017 POSTER

Management of Chemotherapy-induced Neuropathy With 8% Capsaicin Patch − a Preliminary Case Series

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Chemotherapy-induced painful peripheral neuropathy is a known sequelae following treatment with agents like bortezomib, vincristine, taxols and platinum compounds. Systemic neuropathic agents and opioids have been used in its management, but adequate analgesia is not always achieved despite maximal therapy and dose escalation of opioids could be limited by unacceptable side effects. We are presenting our preliminary case series of ten patients with resistant chemotherapy-induced neuropathy who we have successfully managed using 8% capsaicin patch.
10 patients who had painful chemotherapy-induced peripheral neuropathy were treated with a single 30-minute application of 8% capsaicin patch after an hours' pre-treatment with EMLA as local anesthetic cream. The treatment was well tolerated and the burning sensation after treatment was managed with local cooling measures or small doses of short-acting opioids. Side effects like erythema, pruritus and pain were essentially at the patch application site and were self-limiting. Patients started reporting improvement in pain relief after about 24 hours and most patients reported sustained analgesia on follow-up. There was consistent reduction in pain scores and improvement in activities like walking that were previously limited by the pain. The pain relief was further validated by reduction in opioid doses and also systemic neuropathic pain medications.
Capsaicin acts on the TRPV1 receptors and an 8% capsaicin patch is being recently used for the management of peripheral neuropathic pain states. The mechanism of action is by initial hyperstimulation and then neurite degeneration; this is followed by regeneration over three to six months. There is good analgesic effect, but no change in sensory modalities like light touch, pinprick, temperature or vibration sense. Unlike the 0.075% capsaicin cream, which needs to be applied three or four times a day over several weeks, the 8% patch is a single application and could be repeated after 3 months.
Preliminary findings are very encouraging in the use of 8% capsaicin patches in the management of chemotherapy-induced neuropathy. It is efficacious, well tolerated and could reduce systemic analgesic requirements. Further studies and long-term follow-up are being carried out to further evaluate this novel therapy in the management of chemotherapy-induced painful peripheral neuropathy.

3018 POSTER

Treatment of Painful Bone Metastases With Magnetic Resonance Guided Focused Ultrasound

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Background: Magnetic Resonance guided Focused Ultrasound (MRgFUS) is a non-invasive treatment technique that recently has been shown to be effective for thermal ablation of a variety of benign and malignant tumours. We present here results of a clinical trial conducted in our facility. The main objective of the trial was to evaluate safety and effectiveness of MRgFUS treatment of pain caused by bone metastases.
Material and Methods: 31 patients with painful bone metastases were treated with MRgFUS at Petrov Research Institute of Oncology, St. Petersburg, Russia. Immediately after procedure patients were examined for any adverse events and after a brief recovery discharged. Patients were followed up on 1 and 3 days, 1 and 2 weeks, 1, 2 and 3 months post treatment. During each visit, treatment safety was evaluated by recording and assessment of device or procedure related adverse events. Effectiveness of palliation was evaluated using the standard pain scale (0-no pain/10-worst pain imaginable) and by monitoring changes in the intake of pain-relieving medications. A reduction of 2 points or more on pain scale was considered a significant response to treatment. 17 patients were male and 14 female. Mean age was 55 years old (19−76). The primary cancers were: 19 breast, 4 stomach, 2 bronchus, 2 bladder, 4 other. Targeted lesions were 14 osteolytic, 8 osteoblastic and 9 mixed. 23 were pelvis metastases, 4 were located in the humerus bone and 4 were located in the ribs.
Results: No significant device or procedure related adverse events were recorded. 3 patients died during the follow-up period due to disease progression, thus 3 months follow-up data includes only results of 28 patients. All patients reported significant improvement in pain with no change in their medication intake. Mean worst pain score at baseline, 1 day, 3 days, 1 week, 2 weeks, 1, 2 and 3 months post-treatment was 6.9, 6.1, 5.1, 3.5, 2.6, 1.8, 1.2 and 0.9 respectively.
Conclusions: MRgFUS can provide effective, safe and noninvasive palliative therapy for patients suffering from painful bone metastases.

The ability to achieve rapid pain relief after only one treatment session, combined with the high safety profile of the procedure implies that MRgFUS has a significant potential for patients suffering from painful bone metastases.

3019 POSTER

Reduction of Physical Exercise is Associated With Chronic Fatigue and Poor Physical Health Within 5 Years After Cancer Treatment

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Background: The purpose of the present survey was to examine if reduction in physical exercise from pre-diagnosis to within five years after treatment is associated with chronic fatigue and poor physical health in a mixed population of cancer patients.
Material and Method: Patients with Hodgkin or non-Hodgkin lymphomas, testicular-, breast-, cervical-, ovarian- and prostate cancers, aged 18−75 who had finished curative treatment received a mailed questionnaire within 5 years after treatment. The questionnaire included the Fatigue Questionnaire (FQ), the Short Form-36 (SF-36) and the Godin Leisure Time Exercise Questionnaire (GLTEQ). Chronic fatigue and poor physical health were defined according to standard procedures for the FQ and the SF-36. The patients recalled their exercise level pre-diagnosis and reported their present exercise level (GLTEQ). Those who met public health exercise guidelines both pre-diagnosis and post-treatment were defined as those maintaining exercise and those who met the exercise guidelines pre-diagnosis but not post-treatment were defined as those reducing exercise. Multivariate logistic regression analyses were used to examine for the associations between the outcomes, explanatory variable and covariates.
Results: Among 472 participants, the median age was 54 years, median number of months since diagnosis was 41, 53% were female, 68% maintained exercise and 32% reduced exercise. Chronic fatigue was more common among those reducing exercise than among those maintaining exercise (55% versus 33%, $p < 0.001$). More of those reducing exercise also had poor physical health compared to those maintaining exercise (39% versus 15%, $p < 0.001$). Logistic regression analyses adjusted for socio-demographic and disease-related variables confirmed the associations between reduction in physical exercise and chronic fatigue [adjusted OR = 1.76 (95% CI: 1.14–2.73)] and poor physical health [adjusted OR = 3.05 (95% CI: 1.71–5.41).
Conclusion: Patients reducing their physical exercise level after cancer treatment have increased risk for chronic fatigue and poor physical health compared to those maintaining their exercise level. These results indicate that promoting continuance of physical exercise is relevant for follow-up of cancer patients post-treatment. However, confounding factors cannot be ruled out and the cross-sectional design limits the possibility to draw causal inferences. Studies with prospective design are therefore needed.

3020 POSTER

Role of Paroxetine in the Treatment Anticipatory Nausea and Vomiting in Cancer Patients: Multicentre Experience

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Background: Nausea and vomiting are acute side effects of chemotherapy most widely investigated. The nausea and vomiting that often accompany later treatments commences even prior to the chemotherapeutic agent being given, and this phenomenon has been defined as anticipatory nausea (AN) and vomiting. AN and vomiting is a learned response to one or more distinctive features of the chemotherapy clinic (conditioned stimuli) associated with the administration of emetogenic chemotherapy (unconditioned stimuli). The treatment of anticipatory nausea involves the use of benzodiazepines or the use of psychological techniques. Paroxetine is a potent selective serotonin reuptake inhibitor with indications for the treatment of depression, obsessive–compulsive disorder, panic disorder and social phobia. The recommended dose of paroxetine in clinical practice varies between 20 mg/die and 60 mg/die. The purpose of this study is to test the efficacy and safety of paroxetine in the treatment of anticipatory nausea and vomiting in cancer patients undergoing chemotherapy.
Methods: From June 2009 to January 2011 60 patients were included in the study. All patients were candidates for the execution of at least six cycles of chemotherapy and reported the occurrence of anticipatory nausea or vomiting after two cycles of chemotherapy. Response to treatment with paroxetine was assessed after each cycle of therapy from inclusion in the study. Was also evaluated the dose of paroxetine used more frequently and more effectively. Safety findings were also recorded.
Results: A total of 60 patients were included with a mean age of 70±11 years. Most frequent tumour types were breast (33%), colon (25%), lung (16%), pancreatic (16%) and ovarian (8%) cancers. At inclusion all patients were enrolled to take paroxetine drops 20 mg/day and patients who did not benefit by increasing the dose after each cycle, up to a maximum of paroxetine drops 60 mg/day. All patients were evaluated for effectiveness at each cycle of chemotherapy. 80% of patients reported disappearance anticipatory nausea or vomiting at the first reassessment (paroxetine drops 20 mg/die); 10% patients at the second reassessment (paroxetine drops 40 mg/die); 5% patients at third reassessement (paroxetine drops 60 mg/die); 5% patients non-responders. There was no significant toxicity experienced.
Conclusions: Paroxetine may be considered a drug of choice for the treatment of anticipatory nausea or vomiting in cancer patients.

3021 POSTER

Prospective Validation of the Palliative Prognostic Index in Terminally Ill Egyptian Cancer Patients

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Background: Patients with cancer and their caregivers frequently wish to know how long they expect to live. Improved prognostication would enable the patients and their carers to be better prepared for their impending death and allow clinicians to make better informed decisions about place of care. The Palliative Prognostic Index (PPI) was developed in 1999 by Morita et al, based on the following variables: Palliative Performance Status (PPS), oral intake, oedema, dyspnea at rest and delirium.
Patients and Methods: This is a prospective observational cohort study aimed to validate the Palliative Prognostic Index (PPI) in a population of terminally ill cancer patients referred to the palliative care unit of Kasr Al-Aini Center of Clinical Oncology, Cairo University, Egypt. One hundred patients were included in this study over three months period (Oct 2009 − Dec 2009). A numerical score was given to each variable, the sum of the single scores gives the overall PPI score for each patient and is used to subdivide the study population into three groups: Group 1 corresponded to patients of low PPI $\leqslant 4$, Group 2 of intermediate PPI > 4 and $\leqslant 6$, and Group 3 of high PPI > 6. Included patients were followed up for a minimum of three months. Follow up data were updated as of 31st March 2010.
Results: Multivariate Analysis revealed that PPS, PPI and presence of dyspnea or delirium had statistical significant effect on survival. Median survivals were 77 and 102 days in cases with and without dyspnea respectively ($P = 0.01$), while 76.5 and 98.5 days with and without delirium respectively ($P = 0.003$). Median survivals were 189.5, 97 and 62 days in patients with PPS of $\geqslant$60%, 30−50% and 10−20% respectively ($P = 0.0001$). Patients with low (PPI Score $\leqslant 4$), intermediate (PPI Score >4 and $\leqslant 6$) and high PPI (PPI Score >6) had median survivals of 107, 103.5 and 77 days respectively ($P = 0.001$).
Analysis of the different clinical and pathological factors as significant estimates of short term survival of 3 and 6 weeks showed that the PPI and the presence of dyspnea had statistically significant effect on 3 and 6 weeks-survivals of palliative cases in the study. PPS had significant effect on 6 weeks-survival only.
Conclusions: The median survival of the 3 subgroups according to PPI score were 107 days, 103.5 days, and 77 days for Group 1, 2 and 3 respectively compared to 68, 21 and 5 days of corresponding groups respectively as reported by Stone et al, 2008. This difference may be attributed to the early referral of the patients to the palliative care unit in our patients. Thus, the PPI may not be the best prognostic scoring system for Egyptian advanced cancer patients, so that further studies to evaluate other systems and to develop a suitable model is needed.
Because of survival prediction is a very active area of clinical trials, so that, the resultant predictivity could be further improved by integrating other prognostic factors studied in larger prospective, multicentric studies on different populations.

3022 POSTER

Survival Trends in Patients With Disseminated Cancer − Outcome of Palliative Cancer Treatment in the Friesland Province

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Background: The total number of patients living with a disseminated cancer has increased, most likely due to an ageing population, better imaging modalities and improvements in systemic therapies. During the so called palliative phase, patients may develop disabling symptoms needing