from first contact until death ranged from 320 days (prostate) to 72 days (urothel), for lung cancer 138 days, for colorectal 204 days. The time from stage IV to first PCC outpatient contact was 310 days for lung, 492 for colorectal cancer. The time from first contact with palliative care of patients seen first in the palliative care inpatient unit, or the hospital mobile team was substantial shorter time.

Identified Pa-IOP include a) focused one time visit in the outpatient unit, b) a PCC staging based on a standard situation (e.g., new stage IV, progression), c) shared care with alternating visits by oncologists and the PCC outpatient clinic, d) taking over care by the PCC team. Patient characteristics and outcomes of patients cared for by the four Pa-IOP are currently analyzed.

Conclusion: Identification of different service patterns of integrated oncology and palliative care and associated patient characteristics and outcomes, including defined palliative cancer care interventions, may support development of tailored and efficacious services and improve patient care.

3012 POSTER DISCUSSION

Cancer rehabilitation programme – finding a new balance

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Cancer and its treatment can give rise to long-term consequences such as fatigue, lack of energy, or changes in self image. A cancer rehabilitation program may help patients finding a new balance in their life once anticancer treatment has been completed. Due to the impact on quality of life but also on survival rates rehabilitation programs are becoming more important.

A multidisciplinary rehabilitation program, based on the 'Herstel and Balans' Program consisted was offered to adult cancer patients who finished an anticancer treatment with curative intent. The 12-week group program combines physical training and psychological support. Twice weekly participants are trained to improve their physical abilities by fitness, group sports and hydrotherapy under supervision by physiotherapists. The psychological support includes psycho-educative group sessions on several aspects (e.g. fatigue, diet, intimacy, stress and coping) and individual support, if indicated. All psychological sessions are under guidance of psychologists. The outcome was measured by physical tests, by the EORTC QL and FACT questionnaires and by a qualitative analysis. Since 2004, 228 people participated in the revalidation program organized by the "Ziekenhuisnetwerk Antwerpen (ZNA)-Middelheim". Repeated measures showed an improvement in physical ability, an increased quality of life and a decreased fatigue. The program had a satisfaction index of 95%. Qualitative analysis show that participants regained confidence and tried to pick up work and other interests.

Our results support the integration of a rehabilitation program in the daily care of cancer patients treated with curative intent.

3013 POSTER DISCUSSION

Performance of medical oncologists on end-of-life care for Taiwanese cancer decedents, 2001–2006

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Background: Oncologists play a significant role in cancer care throughout the cancer trajectory and have traditionally emphasized underuse of procedures or treatments with well-established effectiveness as the source of poor care quality with little attention to the overuse of end-of-life (EOL) care. The purpose of this population-based study was to compare EOL care practices in Taiwan between medical oncologists and other physician specialists.

Methods: This retrospective cohort study compared indicators of poor quality EOL care by examining administrative data for a cohort of 204,850 cancer decedents in 2001–2006.

Results: Taiwanese cancer patients whose primary physician was a medical oncologist were significantly more likely than patients with a non-oncologist primary physician to receive chemotherapy (AOR: 3.45, 95% CI: 3.03−4.00) and to spend more than 14 days in a hospital (AOR: 1.11, 95% CI: 1.04−1.19) in the last month of life. However, they were significantly less likely than patients with a non-oncologist primary physician to visit the ER more than once (AOR: 0.88, 95% CI: 0.81−0.96), and to use ICU care (AOR: 0.32, 95% CI: 0.22−0.48), cardiopulmonary resuscitation (CPR) (AOR: 0.71, 95% CI: 0.64−0.80), intubation (AOR: 0.60, 95% CI: 0.51−0.70), and mechanical ventilation (AOR: 0.46, 95% CI: 0.39−0.54) in the last month of life.

Conclusion: Cancer decedents cared for by medical oncologists had a greater likelihood of receiving chemotherapy and prolonged hospitalization but a lower propensity for multiple ER visits, ICU care, and undergoing CPR, intubation, and mechanical ventilation in the last month of life than patients with other types of physicians.

3014 POSTER DISCUSSION

Symptoms, care needs and type of cancer diagnosis in palliative cancer patients in acute care hospitals

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Background and Aim: Palliative cancer in acute hospitals is scarcely studied. We therefore explored the symptoms and care needs of palliative cancer patients and the relationship between diagnosis and symptom related reasons for care during hospitalization.

Material and Methods: Two acute care hospitals in a county with no advanced palliative home care service 24/7. One-day-inventories on 16 occasions in 14 different hospital wards during 2007. On each ward every patient day was classified as "palliative" or "not-palliative" and symptoms were registered according to a check-list. Multiple logistic regression models were used to check associations between symptoms and type of cancer.

Results: Out of 4364 patient days 613 (14%) were classified as palliative; 453 (10%) as cancer palliative days, and 160 (4%) non- cancer days. Of the 453 cancer patient days, 358 were for individual patients; 200 (56%) were men and 158 (44%) were women. Mean age 74 years. The seven most common cancers were prostate 14%, colon/rectum 13%, lung 12%, pancreas/gallbladder 12%, hematological 12%, urinary tract 8% and unknown primary 7%. The seven most common symptoms and needs were detoriation (43%), pain (42%), infection (25%), nausea (18%), social problems (16%), infusion (15%) and blood transfusion (12%).

In men, pain was associated with prostate cancer (OR 2.8 95%CI 1.4−5.7), nausea with pancreas/gallbladder (OR 3.2 95%CI 1.4−7.1) and gastric cancer (OR 5.6 95%CI 1.9−16.7). Infusion/nutrition was associated with gastric cancer (OR 8.2 95%CI 1.6−41.9), hematological malignancies (OR 7.5 95% I 2.3−24.3) and pancreas/gallbladder cancer (OR 6.0 95%CI 1.7−20.8). Infection was associated with hematological malignancies, both for men (OR 11.8 95%CI 4.4−31.6) and women (OR 8.8 95%CI 2.9−26.7). In women, pain was associated with cancer of the urinary tract (OR 12.4 95%CI 1.8−86.0), pancreas/gallbladder (OR 4.2 95%CI1.5−11.9) and colon/rectum (OR 3.1 95%CI 1.2−8.6). Social problems were associated with breast cancer (OR 4.1 95%CI 1.3−12.6) and unknown primary (OR 4.9 95%CI 1.4−17.5).

Discussion: Although we do not know all the causes of the hospital care this study indicates that focus should be on the symptoms instead of the specific cancer diagnosis. The study also indicates that many palliative cancer patients' problems are suitable for advanced palliative home care instead of acute care hospitals.

Poster presentations (Tue, 22 Sep, 14:00−17:00)
Symptom science

3015 POSTER

"Pain gets you down" – a project to control pain in cancer patients

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In the Ziekenhuisnetwerk Antwerpen (ZNA)-Middelheim, a pilot project showed that pain was prevalent in both oncologic (n = 60) and non-oncologic patients (n = 43) with pain scores as measured by visual analogue scale (VAS) (range 0–10) of 1–3 in 33% and 14%; of 4–7 in 17% and 19%; and 7–10 in 1% and 7% respectively. It was also demonstrated that the nursing staff could evaluate pain by VAS and this led to the incorporation of a VAS in the nursing file. In addition, it was shown that a pain protocol based on the guidelines of the World Health Organisation could be implemented in a controlled setting.

The aim of this project was to improve the attitudes towards pain control in cancer patients, hospitalized at the departments of Hemato-oncology, Pneumology and Internal medicine; and to implement the pain guidelines in the different departments. The project was funded by the "Vlaamse Liga tegen Kanker".

The project was developed in different phases, which consisted of a sensibilization of the professional health caregiver and patient and family, each followed by a registration period in the participating departments. The project ran from 1/07/2007 until 30/06/2009. The first part aiming at training the nurses to use the VAS consisted out of 2 interactive training sessions (26/02/2008; 04/03/2009). This session was attended by the head nurses of the 3 departments and 16 and 21 nurses respectively. The training on pain control for all professional health caregivers was given 2 times (19/03/2009, 09/04/2009) and was attended by 64 and 31 participants, respectively. A separate session for residents and physicians was attended by 25 participants. The information session for the patients and family were given once (25/10/2008) and was attended by 75.participants.

There were 3 registration periods at the different departments: registration period 1 run from 21/01/2008 until 15/02/2008 (25 days), registration period 2 from 1/04/2008 until 28/04/2008 (28 days) and registration period 3 from 1/02/2009 until 28/02/2009 (28 days).

The number of patients, patient characteristics and information on pain is given in Table 1.

Table 1.

	Period 1	Period 2	Period 3
Number of pts	43	41	61
Male/female	23/20	31/10	43/18
Age (years)			
eremsp;Median	73	71	70
eremsp;Range	25−92	36−84	20−90
Registered days per patient			
eremsp;Median	6	6	6
eremsp;Range	1−17	1−25	1−28
Nº pts without pain (%)	18 (42)	25 (61)	18 (29.5)
Nº patients with pain (%)			
eremsp;1−3	8 (19)	6 (14.6)	13 (21.3)
eremsp;4−6	9 (22)	8 (19.5)	19 (31.1)
eremsp;7−10	8 (19)	2 (4.9)	11 (18)

Pain is prevalent in hospitalized cancer patients and between 5−19% are experiencing severe pain. This project increased the awareness of pain among both patients and professional caregivers.

3016 POSTER

Evaluating the satisfaction of the Spanish online breast cancer consulting service

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Background: Cancer information on Internet is an increasingly demanded service. There are few reliable qualified cancer information websites in Spanish. 4 years ago AECC launched www.muchoxvivir.org with the HONcode backing and offered consultancy *online* service for breast cancer patients, relatives or friends. Number of visitors and consultants has increased every year. Thus, in 2008, 1,095,743 visits and 714 consultations were registered. A survey of user satisfaction was conducted concerning the service provided in order to look for areas of improvement.

Methods: A link to an online anonymous questionnaire with 5 items, time to response, amount of information, information content, satisfaction and impact on overall quality of life, was e-mailed. Response were categorized into 5 degrees (1 = very dissatisfied to 5 = very satisfied). Other questions evaluated were as follows: age, sex, breast cancer diagnosed versus undiagnosed patients or relatives and, finally, type of query (medical, psychological, social resources, or other). Participants were also asked for suggestions to improve the service.

Results: In 2008, 621 questionnaires were e-mailed to users who gave their permission. 249 users (40%) answered within 2 weeks, most of them in only 1 to 3 days. Mean age was 39.9 (18 to 68). 94.4% of participants were women. Most of them were breast cancer patients (60.2%), followed by relatives or friends (32.5%) and women not diagnosed (72%). Most questions were medical (84.3%) or psychological (17.7%) issues. 76.3% of users were satisfied or very satisfied with the response time; 70.3% were satisfied or very satisfied with amount of information; 71.5% were satisfied or very satisfied with information content; 70.7% got the answer they expected and 46.2% achieved a positive impact on their quality of life. Some important suggestions received were more detailed answers, some kind of follow-up and the possibility to organize "patient forums" or "group therapies".

Conclusions: Our o*nline* breast cancer consultation service is highly appreciated by users, particularly in terms of short time to response and contents. To monitor every consultation and to offer *online* discussion boards or group therapy would be welcome.

3017 POSTER

Dolichol dependent hypersensitivity reactions to chemotherapy in breast cancer: the approach for prevention and management

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Background: Skin reactions caused by chemotherapeutic agents are not rare. In breast cancer they can mimic metastases and infections. The resent results are in favour of the idea that N-glycoprotein synthesis is limited by Dolichyl Phosphate Cycle (DPC), which is a target for chemotherapy and essential in maintaining mucocutaneous resistance and immunity. This dual role is very important in prediction and prevention of chemotherapy-induced skin disoders. With focus on a risk group marker for cutaneous side effects of cancer chemotherapy, the present study was carried out to estimate Dolichol (Dol) metabolism in patients with breast cancer treated with cytostatic agents.

Materials and Methods: The samples obtained from 412 patients with breast cancer before and during treatment with cisplatin, cyclophosphamide, docetaxel, doxorubicin and trastuzumab. Dol in urine was assayed by HPLC method, dolichol phosphate N-acetyl-glucosamine-1 levels. phosphate transferase (GPT) activity was defined in dermal fibroblasts by metaboling labeling (ML) method with [2-(3)H]-mannose.

Results: The normal amounts of Dol in healthy donors urine (n = 250) are 6.0−10.0 mkg/mmol. During the period of observation 90 (21.9%) of cancer patients were presented with different skin reactions, including flushing, urticaria, dermatitis, erythema, pruritus and acne. From this group of patients 74 (82.6%) have had elevated urinal Dol excretion (>20.8 mkg/mmol) 2 weeks before chemotherapy and 85 (94.6%) during and 2 weeks after chemotherapy. ML of cultured dermal fibroblasts from these patients revealed lowered incorporation of radiolabel into full-length dolichol-linked allele oligosaccharides and glycoproteins. sGPT activity was reduced to approximately 85.4−98.4% of normal levels.

Conclusion: There is a reason to suggest that reduced GPT activity, lowered N-glycoprotein synthesis and elevated urinary Dol detected in this group of patients may evidence of the disorders of DPC and possible susceptibility to the development of chemotherapy-induced cutaneous reactions. Elevated urinary Dol is one of the first manifestations of this disorder which could be prevented by breast cancer patients selection and DPC regulation.

3018 POSTER

The patient-perception fatigue PERFORM questionnaire is able to detect improvements of $\geqslant$1gr/dl in hemoglobin level, among cancer patients with anaemia

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Background: Cancer-related fatigue (CRF) is one of the cancer symptoms with greatest impact in the patients' daily lives, and it is gaining importance as outcome measure. PERFORM Questionnaire is a recently developed and validated scale for the assessment of perceptions and beliefs about CRF (Rodriguez CA et al., ASCO 2007). This analysis has been carried out to better know the longitudinal association between the improvement in hemoglobin (Hb) level ($\geqslant$1 gr/dl) and the self-perceived health-related quality of life (HRQoL), in anemic patients.