strength in arm and 19% had strenuous work postures. 60% were on SL and 39% had RTW. 33% had a complete and 67% a partial mastectomy, 38% had a total axillary clearance and 56% had sentinental node dissection only. Results from multivariable analysis of those, as well as potential confounding factors will also be presented.
Conclusions: Today there is an ongoing debate about the optimal individual length and grade of SL after cancer and in Sweden national guidelines are present. These results will give insight in clinical relevant factors of importance for whether women are on SL or RTW short after BC surgery.

Oral Presentations (Sat, 24 Sep, 16:00−18:00)
Nursing Oncology − Symptoms

4173 ORAL

Improving Pain Management Due to a Combination of a Pain Consult and Pain Education in Oncology Outpatients

W.H. Oldenmenger[1], P.A.E. Sillevis Smitt[2], C.A.G.M. Van Montfort[3], P.J. De Raaf[4], C.C.D. van der Rijt[4]. *[1]Erasmus Medical Center Rotterdam, Medical Oncology G0−03, Rotterdam, The Netherlands; [2]Erasmus Medical Center Rotterdam, Neurology, Rotterdam, The Netherlands; [3]Erasmus Medical Center Rotterdam, Trials and Statistics, Rotterdam, The Netherlands; [4]Erasmus Medical Center Rotterdam, Medical Oncology, Rotterdam, The Netherlands*

Background: Pain Education Programs (PEP) and a Pain Consult (PC) have been studied to overcome patient and professional barriers in cancer pain management. These interventions were only studied separately, with several methodological flaws. Only half of the studies described a significant effect on pain. Moreover, PEP studies could hardly prove an effect on daily interference or adherence. Most PEP studies did not mention the adequacy of pain treatment. We compared PEP combined with PC versus standard care (SC) to study the effect on pain, functioning, knowledge and adherence.
Methods and Analysis: This Randomised Controlled Trial was set up a 3-arm study in outpatients with cancer pain, to compare (1) SC, (2) PC by a pain specialist and (3) PC combined with PEP (PC&PEP) (NTR613). PEP consisted of tailored pain education and weekly monitoring of pain and side effects. Because of slow accrual the design was changed in a 2-arm study that compared (1) SC to (3) PC&PEP. The Brief Pain Inventory was used to measure pain and daily interference (BPI-I); knowledge was measured using Ferrell's Pain Questionnaire and electronic vials were used to measure adherence. The primary endpoint was an overall reduction in average pain intensity (API) over an 8-week period compared to baseline. Secondary endpoints were current and worst pain intensity (CPI & WPI), BPI-I, knowledge and adherence. 72 Patients were planned (α=0.029, β=0.80, one-sided t-test). Data were analyzed using non-parametric tests. The study protocol was approved by the Institutional Review Board of the Erasmus MC. All patients gave written informed consent.
Results: Group 1+3 included 72 patients, mean age 59 years (sd=11), 65% female. The groups were similar with respect to performance and underlying cancer. WPI and adequacy of pain management did not differ between groups. The overall reduction in API was SC 1.13; PC&PEP 1.95; $p = 0.03$. The reduction in CPI was SC 0.67; PC&PEP 1.50; $p = 0.016$. The reduction in BPI-I was SC 0.11; PC&PEP 0.91; $p = 0.01$. Pain knowledge increased significantly in PC&PEP compared to SC ($p = 0.008$). Patients in PC&PEP were more adherent than SC ($p = 0.03$).
Conclusions: The combined intervention significantly improved patients' pain, daily functioning, adherence and pain knowledge. Pain Consult and PEP should be regularly offered in oncology outpatients with pain.
Study is closed.
This work was supported by the Erasmus MC Health Care Research and the Erasmus MC Revolving Fund.

4174 ORAL

Cancer's Related Anxiety "Kryptonite" − a Randomized Control Trial for the Use of Guided Imagery and Progressive Muscle Relaxation

A. Charalambous[1], E. Bozas[2], I. Androulakis[2], M. Giannakopoulou[2]. *[1]Cyprus University of Technology, Nursing Department School of Health Sciences, Nicosia, Cyprus; [2]National and Kapodistrian University of Athens, Faculty of Nursing Department, Athens, Greece*

Trial Registry Number: AC-GIPMR-85
Trial sponsor: Cyprus University of Technology
Background: Patients' with cancer psychological well-being can be negatively influenced by the disease or the treatment, resulting in frequent hospitalizations and disruption of the patients' daily living. This paper reports a part of a study to explore the effect of Guided Imagery (GI) and Progressive Muscle Relaxation (PMR) on the anxiety experienced by patients with prostate and breast cancer undergoing chemotherapy or/and radiotherapy.
Material and Methods: A Randomized Controlled Trial was implemented with a sample size of 200 patients with breast and prostate cancer covering all the geographical regions in Cyprus. Anxiety was assessed with the Zung Self-Rating Anxiety Scale prior and post intervention.
One hundred patients were randomly assigned in the control group and one hundred in the intervention group. Based on the protocol, the patients in the intervention group received 4 supervised sessions of GI and PMR at their home within a 4-week period, additionally, to daily unsupervised interventions through audiovisual aids.
Guided Imagery is simply the use of one's imagination to promote mental and physical health. The patient was led through a relaxation and imagery exercise. The first component involved reaching a state of deep relaxation through breathing and PMR techniques. During the relaxation phase, the person closes his/her eyes and focuses on releasing the feelings of tension from his/her muscles starting with the toes and working up to the top of the head. Once complete relaxation is achieved, the second component of the intervention is the imagery, where mental images (floating on a cloud) were directed to the patient.
Results: The matched pair t-test was used to assess the statistical significance differences in the pre- and post-intervention scores. Comparisons were considered significant if $p < 0.05$. For the control group, the mean score of SAS was 58.33 ± 7.45. For the intervention group, the SAS score was 56.28 ± 6.39 and 42.72 ± 6.81 before and after the intervention, respectively. For the intervention group, the difference between pre-and post-intervention scores reached the significant level ($p = 0.01$).
Conclusions: Results showed that the GI and PMR had a significant effect on decreasing anxiety in cancer patients. Results indicated that complementary interventions have a place in an integrative system of home-based cancer care and can work side to side with conventional interventions to improve the patient's cancer journey and overall quality of life.

4175 ORAL

Managing Breakthrough Cancer Pain − New Nursing Guidelines

Y. Wengström[1], T. Rustøen[2], B. Zavratnik[3], C. Rundström[4], I. Weisse[5], J. Geerling[6], S. Williams[7], T. Pappa[8]. *[1]Karolinska Institute, Department of Neurobiology Care Science and Society Division of Nursing, Huddinge, Sweden; [2]Oslo University Hospital, Department of Research and Developement Division of Emergencies and Critical Care, Ullevål, Norway; [3]Institute of Oncology, Clinic, Ljubljana, Slovenia; [4]Karolinska Institute, Clinic of Oncology, Solna, Sweden; [5]Universitäts-Frauenklinik Tübingen, Clinic of Oncology, Tübingen, Germany; [6]University Medical Center, Palliatieve Zorg, Groningen, The Netherlands; [7]University of Surrey, Faculty of Health and Medical Sciences, Guildford, United Kingdom; [8]Hellenic Nurses' Association, Sector of Oncology Nursing, Athens, Greece*

Background: Breakthrough Cancer Pain (BTCP) is a taxing symptom that is often poorly understood and sub-optimally treated which can contribute to unnecessary patient discomfort that can impact their daily lives. Possible contributors to BTCP under-treatment include no universally accepted definition of BTCP, disagreements about what constitutes a BTCP episode, and lack of a validated BTCP assessment tool for clinical use. A European survey of oncology nurses' understanding of, and practice patterns relating to, BTCP management revealed not only an unmet educational need, but also a need for nurse-specific guidance on BTCP treatment and how to manage these episodes in cancer patients.
Material and Methods: Utilising the framework for generating existing EONS Guidelines, the EONS BTCP Working Group took on the task to develop a set of nurse-specific evidence- and practice-based guidelines on BTCP management. The BTCP Nursing Guidelines reflect the findings of the European oncology nurse survey and are the first to address BTCP management from a nurse perspective.
Results: The EONS BTCP survey amongst oncology nurses in 12 European countries revealed that nurses who have not been trained in BTCP management and/or do not have an assessment tool, not only find it more difficult to distinguish BTCP from background pain but also feel less confident in advising patients about BTCP. The BTCP Nursing Guidelines serve as an evidence- and practice-based guide to nurses working with cancer patients. The key objectives of the guidelines include: (1) to outline the nurses' role in identifying and assessing BTCP, (2) to describe how BTCP is recognised and (3) to offer a definition and a specialist aligned BTCP assessment tool to help nurses clearly distinguish between BTCP and background pain. Additionally, the guidelines describe how this type of pain influences cancer patients' everyday life by demonstrating the implications of unmanaged BTCP and provide guidance as to how to best manage these episodes.

Conclusion: It is expected that the BTCP Nursing Guidelines and complementary pocket-guide will increase nurses' knowledge of BTCP and encourage successful management of these episodes thereby improving the safety and quality of care as well as the quality of life for cancer patients suffering from BTCP.

4176 ORAL

A European Survey of Oncology Nurse Breakthrough Cancer Pain Practices

T. Rustøen[1], Y. Wengström[2], B. Zavratnik[3], C. Rundström[4], I. Weisse[5], J. Geerling[6], S. Williams[7], T. Pappa[8]. [1]*Oslo University Hospital, Department of Research and Developement Division of Emergencies and Critical Care, Oslo, Norway;* [2]*Karolinska Institute, Department of Neurobiology Care Science and Society Division of Nursing, Huddinge, Sweden;* [3]*Institute of Oncology, Clinic, Ljubljana, Slovenia;* [4]*Karolinska Institute, Clinic of Oncology, Solna, Sweden;* [5]*Universitäts-Frauenklinik Tübingen, Clinic of Oncology, Tübingen, Germany;* [6]*University Medical Center, Palliative Zorg, Groningen, The Netherlands;* [7]*University of Surrey, Faculty of Health and Medical Sciences, Guildford, United Kingdom;* [8]*Hellenic Nurses' Association, Sector of Oncology Nursing, Athens, Greece*

Background: Pain management plays an important role in oncology nursing. A survey amongst oncology nurses from 12 European countries was conducted to investigate their views on managing breakthrough cancer pain (BTCP). A more specific aim of the survey was to gain insight into oncology nurse BTCP practice patterns while focusing on their assessment and treatment approaches, level of confidence in managing BTCP episodes, as well as to gain insight into how oncology nurses see BTCP impacting cancer patients' daily life.
Material and Methods: In total 1618 nurses working with cancer patients were recruited, and 1164 completed the questionnaire − a completion rate of 72%.
Results: The most common (71%) understanding of BTCP was 'episodic pain that breaks through the stable background pain'. Almost all (98%) nurses discuss pain management with their patients, with pain relief (85%) and side effects (70%) being the most commonly addressed topics. Nearly half of the nurses (46%) reported not using any form of pain assessment tool and more than half (53%) reported that they have not received any training on BTCP management. The survey revealed that nurses who did not have an assessment tool and/or were not trained in BTCP management found it more difficult to distinguish BTCP from background pain. In terms of medications used to treat BTCP, the majority (57%) of nurses indicated that oral opioids were used to treat BTCP in their clinic, and nearly 40% of nurses responded they were not aware that there is specifically designed medication for BTCP. Most nurses (78%) report that BTCP significantly impacts a patient's life, including daily enjoyment of life, mood, functioning, and sleep. Almost all (81%) have found it difficult to control their patients' pain the last month, which is further reflected in 40% of nurses describing that they do not feel confident in advising patients about BTCP management and in 77% reporting a need for more information about BTCP.
Conclusion: This survey reveals that BTCP represents an area of additional need for education in order to improve patient pain outcomes. The impact of nurse specific BTCP education have been documented as evidenced by the association of pain assessment tools and specific training in BTCP management and the confidence in advising patients about management of their BTCP episodes.

4177 ORAL

Handedness and Pain Experience Four Years After Treatment for a Primary Breast Cancer Among Young Women (ELLIPSE 40 Cohort)

M. Bendiane[1], D. Rey[1], A. Bouhnik[1], C. Cluze[1], P. Peretti-Watel[1]. [1]*Ors Paca − Inserm Umr912, Equipe CANBIOS, Marseille, France*

Background: Pain is one of the most important effects of cancer treatment that dramatically affects Quality of Life and professional re-integration of survivors. However, during cancer survivors follow-up physicians tended to underestimate the somatic morbidity factors generating and maintaining pain, but often overestimated the degree of psychological distress. Women with Breast Cancer (WBC) seem to be more vulnerable to pain because of the global under-treatment and under-management of pain. We assume that factors involving physical characteristics or activity such as handedness, breast plastic surgery, sport activity and hand labor could be associated with long term risk of pain experience among cancer survivors.
Methods: We performed statistical analyses to compare medical, social, physical and psychological factors on pain experience four years after diagnosis among a sample of young biopsy-proven primary WBC survivors enrolled in the ongoing cohort ELLIPSE 40. ELLIPSE 40 is a prospective cohort implemented in 2005 in the South Eastern France district. Data were collected from periodic patient's telephone interviews including, medical physician's mailed questionnaires and National Health Insurance Found (NHFF) databases.
Results: From July 2005 to Mars 2007, 217 agreed to participate to the survey (response rate: 73%), 11 died and 173 women were followed (4-years attrition rate: 17%). We studied pain experience of the 160 survivors (excluding 13 women with cancer recurrence or second cancer). Sixty-one women survivors (39%) felt pain in affected breast area in the two past weeks. When comparing women as regard as pain experience, psychological factors are significantly linked to recent pain experience (Quality of life measured by the Who_QoL Scale, Depression measured by the CESD Scale and religious belief). Concerning physical factors, our data shows after adjustment that breast cancer side associated to handedness remain significantly linked too women with breast tumour side of handedness (right-handed woman with right breast tumour or left-handed with left breast tumour) are more prone to declare a recent pain experience (AOR[CI95%]: 2.2[1.14.6]).
Conclusions: Our results suggest that medical follow-up of Breast Cancer Survivors must take into account chronic pain as a common long term effect of treatment. Furthermore specific attention must be given to physical characteristics of women especially to handedness and initial tumour localization.

4178 ORAL

Effectiveness of Nurse-led Telephone Follow-up (NLTFU) in Symptom Management of Patients With Colorectal Cancer Receiving Oral Chemotherapy

O. Craven[1], C. Hughes[1], A. Molassiotis[2], M. Saunders[1]. [1]*Christie Hospital NHS Trust, Nursing, Manchester, United Kingdom;* [2]*University of Manchester, School of Nursing, Manchester, United Kingdom*

Background: Oral chemotherapy is increasingly utilized due to its tolerability, convenience and cost-effectiveness. However there are legitimate concerns about the burden placed on patients in managing their treatment and its possible side effects at home. A recent RCT demonstrated that a structured Home Care Program (HCP), including home visits and weekly phone symptom assessment over 6 cycles, assisted colorectal and breast cancer patients in managing therapy side effects more effectively than standard care and reduced unplanned service utilisation. We used key elements from the RCT to develop a clinically feasible and cost effective NLTFU service, over 2 cycles, for colorectal cancer patients on Capecitabine to assess toxicity and to aid early identification of problems. The aim of this study was to assess the impact of NLTFU on symptom control.
Materials and Methods: This was a large clinical audit. Over 2 years we recruited 298 patients with colorectal cancer to a NLTFU program. This consisted of 2 phone calls during the first cycle of chemotherapy and 1 during cycle 2. A computerized proforma was completed after each call to ensure consistency of assessment and to aid data analysis. A total of 685 proforma were completed. A pooled analysis comparing NLTFU data with RCT Home Care and standard care was performed.
Results: Patients who had NLTFU experienced significantly fewer symptoms than patients who had standard care. They had less nausea ($P = 0.0124$), vomiting ($P = 0.0032$), oral mucositis ($P = 0.0039$), chest pain ($P = 0.00005$) and insomnia ($P = 0.0008$) and this improvement was maintained over both treatment cycles for most symptoms. NLTFU was as beneficial as the HCP in regard to mucositis, vomiting and pain ($P > 0.05$). There was a trend towards reduced fatigue, constipation and hand/foot syndrome (but not diarrhoea) in the NLTFU cohort. The HCP was superior to NLTFU and standard care in most symptom domains.
Conclusions: NLTFU enables patients to better manage chemotherapy toxicity than standard care. While the HCP is an excellent care model for patients on oral chemotherapy, there are extra costs and service implications. NLTFU is a viable alternative and is responsive to patient need and clinical resources. It is essential to provide effective support for patients who take on the onerous task of managing chemotherapy treatments at home. Further research should address NLTFU for those on combination chemotherapy.

4179 ORAL

Chemotherapy and Subjective Cognitive Functioning in Breast Cancer Patients

M.J.J. Pullens[1], J. De Vries[1], L.J.C. Warmerdam[2], J.A. Roukema[1]. [1]*Tilburg University, Medical Psychology and Neuropsychology, Tilburg, The Netherlands;* [2]*Catharina Hospital, Department of Internal Medicine, Eindhoven, The Netherlands*

Background: Although chemotherapy improves the clinical outcome of patients with early-stage breast cancer (BC), it is also known to have