individualized care. Improving knowledge and consequently optimizing care in the palliative phase is becoming increasingly important. Therefore, more data about survival are needed to anticipate the medical requirements for the near future. In the Friesland province with 700,000 inhabitants, the data managers of the Radiotherapeutic Institute Friesland prospectively collected survival and patient data for all patients treated with radiotherapy, either with a curative or palliative intent. In the present study, we evaluated the survival time spent in the palliative phase from 1989 until 2010.

Material and Methods: The database was searched from Jan 1st, 1989 to Dec 31st, 2009 for all patients with solid tumours who presented with metastases, or developed metastatic disease during follow up. The following characteristics were noted: sex, age, primary diagnosis (lung, breast, prostate, other types of cancers), date of first metastasis, time of death. The patients were divided into four cohorts from presentation of first metastasis; before 1995 (I), 1995–1999 (II), 2000–2004 (III), and 2005–2009 (IV). Stratified per tumour type, survival after development of metastases was studied using Cox regression analyses. Reasons for potential bias in the results were also studied.

Results: A total of 23,291 patients were entered into the database. Of these patients, 9,569 (41%) had synchronous metastases, or developed metastases during follow up. There were no large differences in patient characteristics between the time cohorts. Although breast cancer patients had the best overall survival after occurrence of metastatic disease, only lung cancer patients showed an increased survival during more recent time cohorts (median OS, cohort IV 4.5, III 3.9, II 3.5 months, $P < 0.001$).

Conclusions: In spite of developments in antitumour therapies, in a time interval of 20 years, survival after occurrence of metastases improved only slightly in patients with lung cancer within the Friesland province. In non-lung cancer patients, no significant improvements were seen. More knowledge is needed on the actual time spent in the palliative phase and the consequent requirements for optimized palliative care.

3023 POSTER

Prospective Study on Satisfaction and Quality of Life of Oncological Patients Who Underwent TIVAD Placement

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Background: Totally implantable venous access devices (TIVAD) are easy and safe systems for infusion of chemotherapy in patients with cancer. The easiness of use and the guarantee of the preservation of the quality of life (QoL) make it the reference for the long-term venous access although poor data are reported in the literature about the QoL of patients who underwent TIVAD placement.

The aims of this study were to evaluate the satisfaction and the QoL of oncological patients who underwent TIVAD placement.

Material and Methods: Prospective study including exclusively oncological patients who underwent TIVAD placement under local anaesthesia. The questionnaire used was derived from the QoL EORTC questionnaire. The questionnaire was anonymous and evaluated the esthetical satisfaction (scar aspect and position), the pain during and after TIVAD placement, information before and during TIVAD placement and various aspect of the impact on daily life (discomfort, port position, . . .). Chi square tests were used for statistical analysis (independence of qualitative value).

Results: 289 patients participated in this study. There were 232 F (80%) and 57 M (20%). 92% of patients had no or little discomfort; 87.6% had no or little pain; 76.33% were very satisfied or satisfied by the port location; 89.32% were very satisfied or satisfied by scar location; 72.60% were very satisfied or satisfied by the esthetical results; 24.55% felt pain or pain more than expect. Preoperative information and intraoperative information were respectively excellent or satisfactory in 72.64% and 75.91%. Immediate pain was higher in patients <45 y ($p < 0.0154$), in patients with insufficient pre/intra-operative information ($p < 0.0001$) and in females ($p < 0.0001$). Late postoperative pain (>1 week) was higher in patients <45 y ($p < 0.0008$), in patients with insufficient pre-op information ($p < 0.0002$) and in females ($p < 0.0383$). Discomfort was higher in patients with insufficient information (pre/intra-operative). Esthetical satisfaction was less in patients <45 y ($p < 0.0203$) and in patients with insufficient pre/intra-operative information ($p < 0.0003$).

Conclusions: Pre-operative information has a major impact on the intra/post-operative pain, discomfort and esthetical results. Females of <45 y are more sensitive to scar location, port location and esthetical results.

3024 POSTER

Variation in Attitudes Towards Artificial Hydration at the End of Life − a Systematic Literature Review

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Background: Most terminally ill cancer patients have a reduced oral intake in the last phase of life. This may be seen as part of the natural dying process, or it may result in clinically relevant dehydration or malnutrition. Currently no consensus exists about what is the most appropriate management for terminally ill patients with limited oral intake. Therefore artificial hydration (AH) in end-of-life care is an important and emotive topic that frequently raises concerns from patients, relatives and healthcare professionals (HCPs). The aim of this review was to give an overview of currently available evidence around opinions and attitudes towards AH at the end of life.

Methods: We conducted a literature review on the attitudes towards AH at the end of life, using a systematic search for papers in five electronic databases (PubMed, CINAHL, PsycInfo, EMBASE and Scopus). All English papers published between January 1998 and December 2010 that contained data on opinions and attitudes towards the use of AH and its effects at the end of life were included.

Results: In total 11 studies reported on opinions towards providing AH, 9 studies reported on attitudes towards the effect of AH on quality of life and 4 studies towards its effect on survival. Reported percentages of respondents in favour of providing AH at the end of life varied from 22%-100% and for non-provision from 0%-75%. One third of the general public has been found to think that AH improves comfort, whilst among patients a majority feels it can have a physical or psychological benefit. HCPs were found to be less optimistic: 1−43% thought patients benefit from AH at the end of life. HCPs mostly agree AH does not prolong survival, although up to 89% of patients expect it does.

Conclusion: Opinions on the use of AH at the end of life vary. HCPs are more reluctant towards the use of AH compared to patients and relatives, and specialists in palliative medicine even more. Communication and education of this imperative topic in end-of-life care is important for better care and should be research-based.

3025 POSTER

Use of Chemotherapy at the End of Life Among Taiwanese Cancer Decedents, 2001–2006

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Background: The availability of new chemotherapeutic agents has lengthened the treatment timeline for advanced cancers and increases the likelihood of receiving chemotherapy near death. However, use of chemotherapy near the end of life may not benefit cancer patients, as evident by its precipitating emergency room visits, increasing intensive care unit care, precluding early hospice referral, highly frequent deaths in a hospital, elevated anxiety and depression, and a trend toward less satisfaction with care.

Purpose of study: To assess the association between continuation of chemotherapy in the last month of life and patient demographics, disease characteristics, primary physician's specialty, hospital characteristics, and healthcare resource availability at the hospital and regional levels.

Methods: Retrospective population-based cohort study using administrative data among 204,850 Taiwanese cancer decedents in 2001–2006. Multivariate logistic regression was conducted to identify determinants of use of chemotherapy in the last month of life using the generalized estimating equation (GEE) method with robust standard errors accounting for correlation in the error term due to clustering of individuals in the same hospital.

Results: Rates of continued chemotherapy in the last month of life for each study year were 17.5%, 17.4%, 17.3%, 19.0%, 20.0%, and 21.0%, respectively and have remained steady since 2001. Taiwanese cancer patients had greater propensity for continuation of chemotherapy in the last month of life if they were male (adjusted odds ratio [AOR]: 1.19, 95% confidence interval [CI]: 1.13–1.25), younger, single (1.21 [1.09–1.35]), had lower comorbidity levels, were diagnosed with hematologic malignancies (1.90 [1.09–1.35]) and breast cancer (1.24 [1.08–1.43]), had metastatic disease (1.36 [1.27–1.46]), and survived <1 year but longer than 2 months post-diagnosis. The propensity for continued chemotherapy in patients' last month was significantly increased by being cared for by a medical oncologist (3.49 [3.04–3.99]) or in a teaching hospital (1.39 [1.11–1.74]) and with the highest intensity of total inpatient hospital beds (1.63 [0.99–2.68]) but was not influenced by regional healthcare resources (total hospital and hospice beds).

Conclusion: The propensity to continue chemotherapy in the last month of life was determined by patient demographics and disease characteristics, physician specialty, and healthcare resources at the primary hospital level. Maintaining a delicate balance between deciding to continue chemotherapy and starting palliative care remains a challenge. However, appropriate discussion of transition from curative to palliative care may minimize the over-estimated effectiveness of chemotherapy to achieve end-of-life care that best meets cancer patients' needs and preferences.

3026 POSTER

Pain and Insomnia in Institutionalized Cancer Patients: a Prospective Analysis

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Background: Pain and insomnia are among the most prevalent symptons experienced by cancer patients. Although previous research has demonstrated that sleep disturbances are correlated with chronic pain little is known about the occurrence and severity of insomnia and pain between patients with cancer diagnoses. The aim of this study is to evaluate the relationship between pain and sleep disorders in this population.

Material and Methods: In this prospective observational study 142 cancer patients were interviewed by a single investigator. We surveyed the subjects' demographic and tumour-related characteristics. Sleep quality was assessed by a seven item questionnaire that investigated onset sleep problems, the presence of nighttime awakenings, restorative sleep and daytime sleepiness. Pain was assessed using the numerical verbal scale and participants were divided into 3 groups depending on self-reported pain: without pain, mild or moderate-severe pain.

Results: 66% of patients ($n = 89$) presented pain with a median score of 3 (range 0−7) and 51.7% of them required opioide analgesics. Pain intensity and sleep quality weren't related with patient's demographic or clinical data. Median duration of nocturnal sleep was 6.74 hours (range: 3−10 hours) with a median of 1.72 waking by night (range: 0−10 aroused). All patients had at least one of the explored sleep alterations. Pain severity was found to be related with shorter sleeping time ($p = 0.05$) and an increased number of night awakenings ($p = 0.01$). Results showed higher pain levels predicted increased frequency in intiating sleeping problems ($p = 0.0001$), frecuency of non-restorative sleep reports ($p = 0.0001$) and daytime sleepiness ($p = 0.0001$).

Conclusions: Pain is related with worse sleep quality in different aspects: greater onset problems, more daytime sleepiness and more non-restorative sleep. Therefore, pain plays a major role in sleep disturbance among cancer patients. They are necessary new explorations to obtain more conclusive results, as well as studies including behavioral or pharmacological interventions.

3027 POSTER

Emotions, Picture and Radiotherapy

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Background: Drawing is one of the most important psychological projective tests. It deeply investigates human personality, gathering its essential aspects. Pictures are the reflection of the internal affective world (Winnicott, 1971) and they express feelings and conflicts (Quaglia, 2007) without inhibitions.

Material and Methods: In our Hospital, 50 patients in radiotherapy treatments were asked to undergo a specific psychological interview, to the Mini-Mac scale (Watson, 1994) and to illustrate their experience of radiotherapy. 90% of them completed test and interview, but only 60% of patients decided to make the picture.

Results: The refusal could express difficulties in facing the assignment, that could force patients to cope with inner emotions.

Patients could simpler contain feelings during the tests.

Results showed a decline of negative emotions such as fear and worry (2%).

The qualitative psychological analysis of the pictures revealed the prevalence of the following subjects: room of the radiotherapy (47%), rays of the machine (19.4%), streets (10.4%), clouds (7%) and a prevalence of the symbol of a circle (58.6%).

The sphere is the unconscious and universal symbol of unity and perfection, it is an archetype that represents psyche. A circle is often present in the pictures and in the dreams of a person who perceives a danger in his existence and fears for his integrity (Jung, 1964).

This evidence is linked to the emotional difficulties that patients should face during radiotherapy treatments, but they do not express in the interview.

Prevalent coping styles of the patients that decided to paint were: reactivity (44.8%) and fatalism (41.3%). Coping styles of the other patients are distributed in a more homogeneous way: fatalism (37.5%), reactivity (31%), deny (25%) and anxiety (6.25%).

Conclusions: It is our aim to proceed in order to evaluate if the decision to omit the picture could be linked to a fear of facing inner emotions or to a characteristic personality.

3028 POSTER

A Qualitative Study of Survivorship Issues in the Families of Patients With Cancer

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Background: A cancer diagnosis has psychosocial impacts on the affected family, some experiencing increased distress. As cancer incidence and survival rates rise, the number of people living with cancer will increase significantly, but there is little studied of the impact on the family of one of their members surviving cancer.

Methods: 23 families (as defined by them) of cancer survivors (12 more than 3-years post-diagnosis) were recruited through Australian media and participated in a family interview covering long-term outcomes. Interviews were recorded, transcribed verbatim, and then thematically-analysed.

Results: Participants discussed various long-term sequelae within their families. Many reported challenges in managing changes in their working life and their geographical location. Some noted that the physical effects of cancer and treatment of the family member had changed what they could do as a family. For some, relationships with external family members were problematic due to disagreements regarding familial choices. Families spoke of difficulties in managing their own or others' emotions, or in adjusting to changes of personality or priorities exhibited by the cancer patient. Finally, several families raised management of cancer risk factors as problematic: views about the importance and consequences of behavioural change to manage risk varied, and could cause on-going tension.

Conclusions: These (relatively high-functioning) families faced ongoing psycho-social challenges long after diagnosis. Cancer changed the present circumstances and the future possibilities resulting in changed behaviour, and related to issues around identity. This required, adjustments within and without the family, which did not always occur. Some families may benefit by psycho-therapeutic family-centred interventions to address these issues.

3029 POSTER

Quality of Life (QoL) in Patients Receiving Treatment for Non-small Cell Lung Cancer (NSCLC) Across Europe: EPICLIN-Lung Study

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Background: Data collected from the EPICLIN-Lung study (NCT00831909) reflects outcomes approach and QoL assessment in a large scale European NSCLC population.

Materials and Methods: Patients (pts) with confirmed NSCLC attending the relevant hospital for the first time between 1 January and 31 March, 2009 were enrolled, and followed for a minimum of 12 months or until death. Only pts not participating in clinical trials were asked to participate in this QoL sub-study within the EPICLIN-Lung study. A sample of pts were asked to complete self-assessment questionnaires (FACT-L, EQ-5D) at baseline; subsequent QoL assessments were not mandatory.

Results: 3508 pts were enrolled in the EPICLIN-Lung study. Baseline (visit 1; V1) QoL data were available for 1626 pts; of these, 734 provided QoL data at visit 2 (V2). At V1, mean EQ-5D scores were 63.97 ± 20.02 for pts <70 years old and 62.42 ± 19.03 for pts $\geqslant$70 years old; $p = 0.179$. Mean EQ-5D scores by disease stage at V1 were: 64.51 ± 20.51 (Stage I); 68.24 ± 18.72 (Stage II); 67.06 ± 18.49 (Stage IIIa); 64.21 ± 18.82