care advice, tailored towards the nature and severity of symptoms that they have reported. Using a modem, patients then transfer their symptom information to a nurse at the specialist cancer centre. If the symptoms are consistently severe or out with expected norms', the system will alert the nurse via a pager who will then contact the patient, following a specific protocol. All contacts and action taken are documented. Daily symptom reports are collated into a cycle symptom report for review prior to the patients' subsequent cycle of chemotherapy.

Results: The feasibility and acceptability of the handheld technology to patients and health professionals forms the basis of the results. Patients have responded positively to initial pilot work with the handheld computer system and recruitment is currently ongoing. Full results will be available by September, 2003.

Conclusions: It is anticipated that this unique information and communication system will not only enhance continuity of care and resource allocation but will be used to build an individual profile of symptoms, ensuring that patients' previous experiences are used to shape their future care, promoting the concept of individualised patient directed care.

Reference

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1207 POSTER

Dendritic cell-based vaccines: implication for oncology nursing

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Background: In ongoing clinical studies at our institute dendritic cell vacines are investigated for their capacity to induce anti-tumor immune responses in patients with various tumor types. At the department of Medical Oncology stage IV (protocol A) and stage III (protocol B) melanoma patients are treated with peptide-pulsed dendritic cells (DC).

Materials and methods: DC are obtained from patients by leukaferesis followed by cell culture. In protocol A the DC are injected 3 times iv./id., followed by 3 vaccinations of peptide alone. The primary endpoint is the immune response. In protocol B the DC are visualised by radioactive Indium and are injected id or intranodally prior to a radical lymph node resection. Subsequently patients are vaccinated 3 times in combination with IL-2. Migration of DC to lymphnodes is the primary endpoint. After each vaccination immunological responses are measured in peripheral blood. After the last vaccination a delayed type hypersensitivity skin test is performed from which biopsies are taken.

Results: To date 43 patients have been treated (31 stage IV, 12 stage III) and several objective clinical responses have been observed. Side effects were limited to malaise, fever, rigors, chills, and local reactions at the injection site

Oncology research nurses are involved in this program in informing patients, psychological support, instruction of injecting IL-2, monitoring side effects and logistics. In the future research nurses will be involved in performing skin tests and vaccinating patients.

Conclusions: We will discuss the implications of experimental treatment modalities such as DC-vaccins for oncology nursing in daily practice.

1208 POSTER

Advanced, computerised cold cap for preventing chemotherapy induced alopecia.

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Background: Besides nausea/vomiting and fatigue, patients receiving chemotherapy experience alopecia as one of the worst side effects. Purpose: The purpose of the present study is 1) to evaluate if it is possible to prevent chemotherapy-related alopecia by using an advanced, computerised cold cap, 2) to evaluate the side effects, and 3) to evaluate the cost.

Material and methods: Patients with primary breast cancer receiving adjuvant chemotherapy, 5-FU, epirubicin, and cyclophosphamide (FEC). The cold cap used has several advantages: 1) it is possible to regulate the temperature individually, 2) the time of cooling down can be prolonged to minimise the discomfort, and 3) data from the treatment session are monitored and recorded automatically. All patients received seven courses of FEC. Before every course the patients were pre-cooled for 20 minutes (3C or 5C depending on the thickness of the hair). The post-cooling time after discontinuation depended on the actual dose of epirubicin given. Prior to the first course the patient filled in a questionnaire in order to validate their hair. During course 2-7 the patient filled in a visual analogue scale (VAS) to monitor the degree of alopecia and side effects related to the scalp cooling. After the last course the patient repeated a questionnaire monitoring the overall benefit of the scalp cooling treatment. In addition, clinical photos were used to validate the hair-loss. At any time during the treatment the patients could choose a free wig, but if they did, the treatment with the cold cap was discontinued.

Results: An interim analysis after a period of 6 month shows that 26 patients were treated with scalp cooling. Only 3 of these patients preferred a wig due to their own evaluation of the loss of hair. In other terms 88% did not use wig. All the patients found the side effects and the extra use of time acceptable. Only minor difficulties in the implementation of the scalp cooling treatment were experienced, and it was fairly easy to learn how to handle the equipment. Regarding the economics, the first estimation tells us that the expenses of the scalp cooling treatment are lower than budgeted wig expenses.

Conclusion: Scalp cooling with advanced computerised cold cap seems to be effective with acceptable side effects, a paying proposition, and clearly preferred by the patients.

1209 POSTER

The use of web based information in handheld computers in supporting patients receiving outpatient chemotherapy

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Background: The aim of the study is to assess the value of, usability and accessibility of web-based symptom management information installed on handheld computers in self care advice provision for patients receiving chemotherapy.

Design Specification: Information provided must be both usable and accessible to an older population who may have little or no computing experience and in addition may have never accessed the Internet. General symptom information takes the format of a web site. Other web-based information on chemotherapy, cancer and useful contacts are also provided, in the format of an "e-book".

Design Issues: The handheld has a screen size of 240*160 pixels (approx. 3") and therefore poses a particular challenge in making vast amounts of information accessible and usable to patients of all capabilities, Given that 50% of the patients participating in the trial are likely to be of an older demographic, it is imperative to consider the needs of this user group in all stages of the design process. As there is very little research on what makes an interface usable for older adults (Hawthorn, D. 2000), the interface design has been trialled by patients attending a Colorectal Cancer Clinic (i.e. those patients in the older demographic) at each stage of the design process. Changes were then made to the design based on the feedback to facilitate a user-friendly interface, which would be accessible to all.

Results: The usability, accessibility and value of the information form the basis of the results. Initial trials of the interface have shown that patients respond favourably to the technology and the information provided, even those who have no computing or Internet experience. Full results will be available by September, 2003.

Conclusions: It is anticipated that this unique information and communication technology will promote the concept of individualised patient directed care and facilitate patient empowerment.

Reference

[1] Hawthorn, D. (2002) Possible implications of ageing for interface designers. *Interacting with Computers* (12) pp. 507-528

1210 POSTER

Danish national special interest group in nausea and vomiting (SIG N&V) has made an audit on nausea and vomiting with cancer patients receiving chemotherapy

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SIG N&V is nationally represented and organized by the National Cancer Group for Nurses (FS13) and sponsored by Glaxo SmithKline

Background: The SIG N&V's primary aim is to improve the care for cancer patients with nausea and vomiting. Since its foundation in 1994 SIG N&V has focused on educating oncology nurses in the aspects of nausea and vomiting and developing national clinical standards and guidelines for nurses as well as information regarding antiemetics and self-care guidelines for patients and relatives. The SIG N&V has produced a standard with focus on the result, process and structural criteria of nausea and vomiting at cancerpatients recieving chemotherapy. The result criteria is based on litterature studies. An audit was initiated in autumn 2002 to help to set realistic result criteria.

Methods: The purpose with the audit was to investigate on both patient experience and the strucutural factors. The investigation of patients experience was a prospective structured questionnaire of 9 questions to 144 cancerpatients. The registration of the structural criterias was based on questions to 12 wards at 6 hospitals on; annual education in nausea and vomiting; the presence of standard for antiemetic use; standards of nursing concepts; self care guidelines for the patient about how to prevent nausea and vomiting when receiving chemotherapy, or how to treat nausea and vomiting when the cancer patient actually suffers from it. Also in addition the presence of antiemetic information and a diary for selfassessment of nausea and vomiting.

Result: 50% of the patients had nausea and 28% had vomiting. 96% did get antiemetics but only 51% received information on antiemetics. 66% of those who got oral and written information were able to use it. There were standards for antiemtic use and annual education in nausea and vomiting, but only in 24% of the nursecharts the nursing care was documented. The anamnesis of nausea and vomiting was not documented in any medical journal or nursecharts. The antiemetic treatment was documented many different places causing confusion of the actual chosen antiemetic.

Conclusion: It is obvious to adjust the existing standard and to implement it as soon as possible.

1211 POSTER

Evidence based symptom management for patients with breast cancer: clinical pathways teach process, implementation and evaluation

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Background: Providing care based on the best available scientific evidence is essential for optimal disease management, and can be best accomplished by collaboration of all disciplines within the health care team. Clinical Pathways (CP) are tools which permit multidisciplinary collaboration in the planning and delivery of care, and the evaluation of treatment outcomes.

Materials and methods: The Breast Cancer Clinical Pathway project was undertaken in 1998 and is ongoing at the National Cancer Institute in Naples, where CPs were developed for patients undergoing breast cancer surgery, radiation therapy, and ambulatory follow up. Initial outcome measures were reported on fatigue incidence, surgical complications, and control of nausea and vomiting. As nurses gained more familiarity with the process, we identified 4 areas for providing evidence based symptom management: oral mucositis, fatigue, lymphedema and cognitive dysfunction. This process was to be used institute wide as a model for teaching evidence based practice (and some of its inherent difficulties) to nurses.

Results: Oral mucositis was selected for the large amount of existing studies spanning decades. Our guidelines were based on existing systematic reviews and including standard grading and oral care instructions. Fatigue was selected as a follow up to our previous results of its incidence in our patient population, and to show recent progress in reduction of fatigue through nursing interventions. Assessment and interventions are based on the NCCN fatigue guidelines and allow for tailored nursing interventions. Lymphedema prevention was selected for lack of evidence regarding prevention. Guidelines based on physiologic rationale and the National Lymphedema Network with standardized measurement criteria were integrated with patient education materials. Early diagnosis and prompt referral for lymphedema treatment are key outcomes measures. Cognitive dysfunction is the most recent symptom for which we routinely screen, and allows for subjective patient reports of symptoms and thresholds that prompt further investigations based on clinician findings.

Conclusion: The clinical pathway model provides a method for planning evidence based care with clear measurement and outcome criteria. The model facilitates teaching nurses the process of evaluation of evidence with its application in clinical practice.

1212 POSTER

Evidence based prevention and management of lymphedema in patients affected by melanoma with lymphadenectomy

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Background: Sentinel lymph node biopsy permits correct staging of patients with cutaneous melanoma, and positive biopsy is followed by subsequent radical lymph node dissection. Lymphedema is a potential morbidity of this procedure, and can profoundly impact both functional status and quality of life of affected patients.

Materials and Methods: We evaluated the current practices of prevention and management of lymphedema in melanoma patients who had undergone lymphadenectomy, and the actual incidence of lymphedema in these patients, in order to evaluate our practice and implement evidence based guidelines. Data was analysed for 209 consecutive patients admitted to our surgical oncology unit affected by cutaneous melanoma with lymphatic micrometastasis from 1997 to 2002.

Results: Of 118 patients who underwent axillary lymphadenectomy, 2.5% developed moderate lymphedema (grade II). Of 60 patients who received deep groin dissection lymphadenectomies 5% developed moderate lymphedema (grade II). Of 31 patients submitted to superficial groin dissection, 6.4% developed grade II lymphedema. No cases with modified radical neck dissection developed lymphedema of any grade. Overall incidence of lymphedema for grade II was 3.82%, and for grade III 1.43%. Standard postoperative measures for prevention of lymphedema of the extremity included: elastic compression banding of the extremity for 24 hours followed by elastic compression stocking and early mobilization. Patients who developed lymphedema were treated with sequential mechanical lymph drainage; magnetic therapy; ultrasound therapy, laser therapy and/or other drug therapy. Lymphedema grading was done at the discretion of the surgeon in follow up visits, standard measurement criteria and documentation were not used. Guidelines for patient education regarding prevention of lymphedema were lacking. We identified 3 areas where nursing could play a key role 1) developing a patient education brochure regarding risks of lymphedema and strategies for its prevention based on the National Lymphedema Network guidelines and physiologic rationale 2)adopting standardized cirtieria for the evaluation of lymphedema and implementing screening measures preoperatively and during follow up so early and accurate diagnosis can be made 3)collaborating with the rehabilitation department for prompt referral when lymphedema occurs.

Conclusions: Nurses can play a key role in the areas of prevention and early detection of lymphedema through evidence based guidelines, early diagnosis and prompt treatment. Clear outcome criteria will facilitate our ongoing program evaluation, and current research is focused on evaluating effectiveness of nursing interventions, compliance with guidelines and incidence of lymphedema.

1213 POSTER

Implementing change in a inpatient chemotherapy service

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The standard of care offered to patients receiving inpatient chemotherapy was identified as an area that required urgent attention. Problems with the quality of the service were identified by both patients and staff therefore a nursing post from the ward establishment was identified to lead on the improving the service provision to patients. This post commenced in September 2002.

The first priority was to obtain an understanding of the main problems within the chemotherapy inpatient service. Lead by the chemotherapy sister a multi-professional review of the existing service was conducted and data from an annonymous patient questionnaire was collected over a 3 months period. Collation of the information from these helped to identify areas for service improvement and development.

Key problem areas identified:

- No clear point of contact for patients having inpatient chemotherapy.
- Varying consistency in information giving
- Long waiting times for patients for their beds and treatments
- Poor documentation
- Limited time from ward nurses due to other ward demands.

From these areas the following priorities were identified and addressed:

- Patient's and multi-disciplinary members had a single point of contact
- New patients talks were consistent and given only by the chemotherapy sister