tostatic treatment, especially prolonged treatments. The need arises due to poor availability of peripheral veins. However, placement of a CVAP is costly and may lead to life-threatening complications. We studied the complications and the influence of nursing practice on the prevention of these complications.

Methods: 120 patients with CVAP were studied. The median age was 50.5 years. Tumour types were breast, lymphoma, lung, melanoma, soft tissue sarcoma, gastro-intestinal and genito-urinary. Positioning of the CVAP was assessed by means of a chest X-ray. The time interval between implantation and the first chemotherapy delivered through the device was +- 24 hours. If early complications occurred, chemotherapy was delayed until resolution of the problem. Blood samples were sent for culture in case of suspected infection.

Results: Median implant duration was 204 days. Complications were devided into two categories. EARLY: Defined as intra operative and post implantation period to first use. LATE: Defined as after first chemotherapy administered. Seventeen (14.17%) CVAP were removed before the expected time.

Complications included:

1. Symptomatic infection in 10.8%.
2. Venous thrombosis in 3.3%.
3. Mechanical problems in 3.3% of patients. No patients died due to CVAP complications.

Conclusion: CVAP have become essential in the treatment of cancer patients. Complications are infrequent but still occur. Infection is the most common complication of these devices and the leading cause of early removal. Adequate patient information and meticulous nursing practice contributes towards a lower complication rate.

1502 POSTER

Motivation of patients in clinical oncology trials

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Introduction: As oncology trials are usally long term in nature, it is vital to ensure that continuing follow up of the patients is achieved to monitor both side effects, quality of life and disease progression.

Materials and Methods: The important factors are

- The nursing and medical teams involved
- Clinic Environment
- Transport to and access to the Care delivery point.
- Adequate information to and communication with the patient covering the trial, the follow up and potential complications.
- Continuity of staff
- Patient selection at entry to trial
- Acess to self-help groups

Discussion: Attention to the above factors can maximise the proportion of patients completing follow up, minimising the drop out rate. This will therefore maximise the power of the study.

By utilising these protocols we have managed to keep our drop out rate below 5%

1503 POSTER

Cancer patients' experiences of participation in care

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The purpose of this study was to explore the experiences of cancer patients about participation in care and the preconditions for this participation. The data were collected in focused interviews, and the analysisi of the data was based on qualitative content analysis. The sample comprised 34 voluntary cancer patients from haematological and oncological wards of one university hospital in Finland. The mean age of the respondents was 44 years.

The results revealed that the patients' views of participation varied considerably. Some of the patients had the opinion that their participation in care was impossible. Some considered participation either in terms of being involved in decision making or in terms of expressing their views on treatment options.

The preconditions for participation in care were analysed through factors promoting and restricting participation. Promoting factors included good health, access to information, assertiveness, good interactive relationships with nurses and physicians, and engouragement of the staff to participate in care. Restricting factors of patient participation were poor health, ignorance, anxiety, age, time pressure of staff, lack of time, high staff turnover and poor interactive relationships with staff.

The results considering patient participation showed that there were three kind of participants:1) minor of patients participate actively in decision making,2) some patients gave active consent and 3) the most of patients gave passive consent to medical decisions.

1504 POSTER

Information for patients and their relatives before starting radiation therapy

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For 15 years a group of nurses have been offering one hour long information session for patients who are to start radiation therapy.

The invitation to the session is given to all patients with curative cancer when preparing for the treatment during the CT (computer tomography). Relatives and friends are welcome as well. No register in advance is necessary.

The information includes:

A short history of our department.

What the preparations for the treatment entails such as dose planning, mask, fixatives and the purpose of them.

Why there is a need for a waiting period before the start of treatment.

How the treatment is beeing delivered.

Routines such as doctor appointments, bloodtests and contact with other care professionals.

Side effects and how to minimize them.

Travelling to treatment and travel allowances.

The visitors also are invited to a tour of the department as well as a visit to a treatment room.

A questionnaire was used to evaluate the information given to patients. The result shows that patients that came for the information session perceived less stress and were much calmer and relaxed at the start of the treatment.

1505 POSTER

PICCs (peripherally inserted central catheter) or Hickman catheters - a comparison of patient comfort and experiences

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Purpose: Eighteen months after setting up a PICC insertion service for patients receiving chemotherapy, an audit was undertaken to assess the need and experience of PICC insertion, against our original Hickman catheters.

Method: A questionaire was developed and used for each patient who had a PICC or Hickman placed, to establish where the catheter was inserted (either within the Medical Oncology outpatient clinic, or in radiology),whether the place of insertion would have any bearing on any future problems, whether the patient actually had any problems, and for how long the catheter functioned. The questionaires were completed by the sister in the Oncology department, by accessing the patients notes, on all line insertions over a three month period.

Results: In the three month period of the audit, 67 catheters were inserted. Some patients received more than one catheter. Approximately equal numbers of PICCs and Hickman lines were placed.

Conclusion: Although the results of the audit are not yet available, preliminary results show that the problems occurring happened in about similar numbers for both Hickmans and PICCs. Very few patients from the numbers inserted had any problems at all. PICCs appear to be advantageous, however, as they are less obtrusive, inserted by a skilled,trained nurse, better tolerated, and with no necessity for a general anaesthetic or sedation.The procedure is quick and relatively painless.

1506 POSTER

Re-expression of HLA class I antigens and restoration of antigen-specific cytotoxic T lymphocytes in melanoma cells following 5-AZA-2'deoxycytidine treatment

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Cytotoxic T cells (CTLs) play a central role in the elimination of virally

infected and tumor cells, and require HLA class I expression on these cells to guide their attack. However, HLA cell surface expression on these cells is frequently switched off, and this has negative effects on immune surveillance. Three major mechanisms may account for undetectable or low HLA class I expression in tumor cells:beta 2m mutation, TPA deficiency, and low factor binding activity specific for the regulatory elements of these genes. Here we describe another molecular mechanism which accounts for the complete absence of HLA class I molecule expression in a tumor line (MSR3-mel) derived from a melanoma patient. Hypermethylation of the MSR3-mel DNA, specifically of HLA-A and -B genes, was identified. This abnormality resulted in loss of HLA class I heavy chain transcription. Treatment of MSR3-mel cells with the demethylating agent 5'-aza-2'-deoxycytidine (DAC) allowed HLA-A and -B transcription, restoring cell surface expression of HLA class I antigens and tumor cell recognition by MAGE-specific CTLs. The MSR3-mel line was obtained from a metastasic lesion of a nonresponding patient undergoing MAGE-3.A1 T cell-based peptide immunotherapy. It is tempting to speculate that the hypermethylation-induced lack of HLA class I expression is the cause of the impaired response to vaccination. The present study showed that DNA hypermethylation could also be a repressor mechanism responsible for the total loss of HLA class I expression in human melanomas, providing a new route of escape from immune recognition.

The results of this study, and the observation that expression of some tumor antigens, is induced by demethylation mechanisms, suggest modulation of DNA methylation as a possible intervention for cancer treatment. However, the high toxicity of the available agents make their use in clinical setting difficult, therefore safe and effective strategies for the therapeutic alteration of DNA methylation are clearly needed.

1507 POSTER

The organisation for the performance of clinical trials at the department of oncology, Uppsala university hospital, Sweden

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Cancer treatment is clearly in need of further development since current therapies provide unsatisfactory results. Clinical trials are a key step in such development and have to be performed efficiently and in correspondence with quality criteria, mainly those of Good Clinical Practice (GCP). This abstract describes the organisation for the performance of clinical trials at our department.

The Research and Development Unit (RDU) at the department of oncology, Uppsala university hospital, Uppsala, Sweden, was started approximately 1 year ago and presently enclose 2 part time physicians (1 oncologist, 1 clinical pharmacologist), 1 part time secretary, 1 full time quality assurance and 7 full time research nurses.

The main purpose of the RDU is to facilitate the clinical research process. Since in Sweden only approximately 10% of all cancer patients participate in prospective clinical trials, an important aim is to stimulate the starting and performance of more clinical trials. Since there is also a need to improve the quality of the clinical trials, notably the "academic trials" (AT), lacking support from the pharmaceutical industry, the RDU has implemented its own Standard Operating Procedures (SOPs) based on GCP, covering all important steps for the planning and performance of cancer trials. One important aspect also covered is the outlining of responsibilities for the investigator and the research nurse within the clinical trial process.

Within the department, the RDU is organised under a Research and Development Council (RDC), with representatives for the department head, physicians in charge of the major tumour groups and the RDU. The RDC assess and approve all clinical trial protocols and their ethical issues and financial agreements prior to start of a new trial. Well started, the RDU should provide full support to the investigator in the performance of the trial. The need for support has naturally been found most pronounced in investigator initiated trials (IIT) and AT.

Through continuous education, both within the RDU and in the department, in GCP theory and practice and critical medical issues related to the performance of clinical trials, the RDU tries to improve its professional and comprehensive support and information to patients participating in clinical trials. The RDU is presently running approximately 40 clinical trials, half of which being IIT or AT, covering the major tumour groups and with emphasis on medical treatment.

1508 POSTER

Allogeneic haematopoietic stem cell transplantation for patients with advanced or refractory multiple myeloma - a chance for cure?

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Introduction: Multiple Myeloma (MM) is a plasma cell malignancy in which high dose chemotherapy followed by autologous stem cell transplantation (SCT) induces a higher response rate and longer overall survival than conventional therapy. Allogeneic transplantation may be curative, but has a limited application because high toxicity and high transplant related mortality. Non-myeloablative regimens are less toxic, allow a rapid and sustained engraftment, maintaining the graft versus myeloma effect that may be enhanced by donor lymphocytes infusion.

Methods: Between November 1998 and December 2000, 7 patients (pts) with MM (6 progressive disease after autologous SCT, 1 refractory disease and low performance status), 5 male, 2 female, median age: 51 years (31-57), underwent a non-myeloablative allogeneic SCT with peripheral blood progenitors from HLA identical sibling. Conditioning regimen was fludarabine (30 mg/m2/dx4), busulfan (4 mg/kg/dx2) and antithymocyte globulin (10 mg/kg/dx4). Cyclosporin was used for GVHD prophylaxis (from day -1 until day +30, then tapered). In order to access the applicability and toxicity of this regimen in our heavily pre-treated pts, we analysed some parameters related with activities of daily living like nourishment, hygienics, communication, occupation and leisure. All pts were transplanted in a room with filtered air, positive pressure and reverse barrier.

Results: All pts engrafted (full/mixed chimerism by STR-PCR) with a median neutrophil count $> 0.5 \times 10^9$/L of 11 days (3-36) and platelet count $> 20 \times 10^9$/kg of 11 days (1-36). Median transfusional support was 4 packed red cells units and 1 platelet transfusion. Median discharge was on day +24 (18-97). Regimen-related toxicity was acceptable with no pts having mucositis grade >3 or hepatic veno-occlusive disease. All pts remained autonomous concerning activities of daily living during admission period. Two pts died (1 from progressive disease 1 year post-allograft and 1 from infection but in complete remission, 6 months after transplant), three pts are in complete remission and two pts are in partial sustained remission. All pts have a Karnofsky performance status $\geq$ 90%.

Conclusion: response rate was high in this group of refractory and heavily pre-treated pts; minimal procedure-related toxicity allowed satisfactory activities of daily living during hospitalisation; the significant improvement in disease status led to a rapid integration in family and social life.

1509 POSTER

Chemotherapy administration: development of a core curriculum

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Purpose: Variations in clinical practice, knowledge levels and skills have been reported by nurses administering cytotoxic drugs (RCN, 1998, Grundy, 1998). For many nurses their knowledge and skills development have been the result of informal experiential learning as part of their job. This situation is unacceptable both professionally and legally and it is crucial that nurses have the appropriate education to undertake cytotoxic drug administration. A core curriculum for cytotoxic drug administration has therefore been developed to address the need for a consistent approach to education in Scotland and provide a framework for future course development.

Methods: The project was commissioned by The National Board for Nursing, Midwifery and Health Visiting for Scotland. Development work was undertaken by a multidisciplinary group with representation from the five cancer centres. The core curriculum has been based on the RCN clinical guidelines for cytotoxic chemotherapy administration. Consideration has been given to nurses' differing levels of involvement with cytotoxic drugs and their different educational needs. The framework has been designed to facilitate the development of courses and content, learning outcomes and clinical competencies have been identified. The core curriculum is currently being circulated as a consultation document.

Conclusion: This paper outlines a national initiative to improve the quality and consistency of practice through education.