

Puget Sound Quarterly

Vol. 13, No. 1
Winter, 1990



ONCOLOGY NURSING SOCIETY

Clinical Practice Committee
Presents

TOPICS IN CHEMOTHERAPY

Rural Nursing

Verapamil

Carboplatin



Plicamycin

Leuprolide

Homecare

Ambulatory Care

Flutamide

From the Editor

This issue of the *PSONS Quarterly* is focused on chemotherapeutic agents—new drugs, new uses for “old” drugs, and new protocols. Chemotherapy protocols are becoming more and more complex. Traditional chemotherapeutic regimens are becoming more intensive, as agents are added as potentiators, each with unique actions and toxicities. Keeping up with changes in chemotherapy

requires constant attention to pharmacology, physiology or tumor response, rationale for combinations of therapies, and toxicity profile. Even those of us not directly administering chemotherapy need to know how changing regimens affect our patients. The Clinical Practice Committee has devoted this issue, entitled “Topics in Chemotherapy,” to discussing topics pertinent to chemother-

apy administration in different health settings, inpatient, outpatient, rural, and home care. It is our hope that you find the content in these articles helpful in your clinical practice. If you have any questions, comments, or would like to join the Clinical Practice Committee, please call the PSONS Hotline at (206) 462-5385.

- The Clinical Practice Committee

President's Message

Taking a Risk

Brenda Nevidjon

I recently heard a speaker say that the two things that nurses don't like are change and conflict. Generally, nurses like to maintain the status quo. She went on to observe further that what characterizes healthcare is change and conflict. I have thought about her comments as I have listened to or read about the challenges of the 1990s that our nursing leaders describe. There seems to be agreement that change is needed in the way in which we provide care to patients. The structure of the nursing care systems is foremost on the list. Healthcare costs continue to escalate despite all efforts to curtail them. In addition, nursing and other healthcare professions have a shortage of available people.

Like many, I believe that we are in the best position to generate and develop the changes needed for the future. Most of us probably see many ways of changing our practice which would have nurses providing nursing care, reduce waste, and increase quality and satisfaction for all concerned. While journal editorials, keynote speakers, and our nursing administrators encourage us to propose, create, develop solutions, staff are wearied by systems that have them functioning as housekeepers to houses-

taff. To propose a change is a risk and demands energy. Perhaps the following verse, clipped from a Dear Abby col-

umn, can be our mantra for the 1990s. If you have another, send it in for the newsletter and share it with your colleagues.

TO DARE

To laugh is to risk appearing the fool.

To weep is to risk appearing sentimental.

To reach for another is to risk involvement

To expose your ideas, your dreams, before a crowd is to risk their loss.

To love is to risk not being loved in return.

To live is to risk dying.

To believe is to risk failure.

But risks must be taken, because the greatest hazard in life is to risk nothing.

The people who risk nothing, do nothing, have nothing, are nothing.

They may avoid suffering and sorrow, but they cannot learn, feel, change, grow, love, live.

Only a person who risks is free.

- Author Unknown

Taken from the Dear Abby column by Abigail VanBuren.

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ANNUAL PSONS SYMPOSIUM

“Horizons in Northwest Oncology Nursing”

February 23-24, 1990

Bellevue Commons, Bellevue, WA

(with a reception to be held Friday, Feb. 23
at the Bellevue Hyatt Hotel)

Keynote Speaker: Margarita Suarez, ARNP, PNP, MA
McCorkle Lecturer: Anne Hughes, RN, MN

Chemotherapy Update

Alice Albright, R.N., B.S.N., OCN
Oncology Nurse-Clinician
Swedish Hospital Tumor Institute

One of the exciting, and at times frustrating, aspects of oncology nursing is the ever-changing therapy. For example, with chemotherapy there may be new agents or old agents given in new ways. Keeping current in oncology can be challenging! To help meet this challenge at Swedish Hospital, we have monthly *New Agent Update* inservices given by Patra Grevstad, R.N., Clinical Coordinator - SWOG. Four or five agents are covered in each inservice. I will share with you some new agents presented in our inservices. I will include their uses, toxicities, and any pertinent nursing information. The agents I have chosen are Carboplatin, Lupron/Flutamide, Ifosfamide/Mesna, Verapamil, and high-dose Methotrexate.

Carboplatin is an alkylating agent which works by inhibiting new DNA synthesis. Its use is in the treatment of testicular and ovarian cancers, although we may begin to see it used in place of Cisplatin with other tumor types. It has far less renal-toxicity than Cisplatin and is better tolerated with less nausea and vomiting. Conventional doses of antiemetics are sufficient to control nausea and vomiting. Carboplatin can be administered in the outpatient setting since less hydration and antiemetics are necessary. Nursing management includes monitoring for peripheral neuropathies that are enhanced in those patients previously treated with Cisplatin. The dose-limiting toxicity is thrombocytopenia, with counts decreasing in 7-10 days or sooner. Bone marrow toxicity is the major disadvantage of Carboplatin. The literature describes myelosuppression as moderate to severe, while that of Cisplatin is considered bone marrow-sparing. Mild ototoxicity and hepatotoxicity may be seen with high doses. Carboplatin is mixed in D5W, not normal saline, and given by minibag over 15 minutes to an hour. Dosages vary depending upon the particular protocol, but a typical dose range is 300-400 mg/m².

One question we have asked physicians: "If Carboplatin is as effective as Cisplatin and better tolerated, then why aren't we seeing it given more frequently?" The answer seems to be that there may be a reluctance on the part of the clinician to switch from an agent known to be as effective as Cisplatin to one they have less experience using. Also, the increase of bone marrow toxicity is of major concern with certain patients.

The medication **Leuprolide (Lupron)** is being used to treat advanced metastatic prostate cancer. It is used for tumors which are hormone

dependent, so may also be used in some pre- and post-menopausal breast cancer patients. It is a synthetic hormone, so side effects are primarily hot flashes, decreased libido, and impotency. The elevation of testosterone levels for 1-3 days after initiating therapy may cause or increase bone pain. Patients should receive pain medication for this. Leuprolide is given in doses of one mg daily SQ and is often given in combination with the oral medication Flutamide.

Flutamide is classified as nonsteroidal antiandrogen used for palliative treatment of advanced prostrate cancer. Two capsules (250 mg each) are taken every 8 hours. Side effects include hot flashes, decreased libido, nausea, vomiting, diarrhea, and gynecocomastia.

The combination **Ifosfamide and Mesna** is now commercially available. Ifosfamide is an alkylating agent used to treat sarcoma, testicular, ovarian (germ cell tumors) and mesothelioma. It is an analog of Cytosan, so its major side effect can be bladder toxicity. To prevent hemorrhagic cystitis, the medication Mesna is given. Mesna is a uroprotective agent and can be given mixed together with the Ifosfamide or as minibags given pre- and post-Ifosfamide. Mesna has no antineoplastic effects. Side effects of Mesna include nausea, vomiting, diarrhea and soft stools, headache, fatigue, and a bad taste in the mouth. Mesna is generally well-tolerated. Doses may vary depending on protocol, but a typical dose is 2.5 gms/m²x4-5 days.

Ifosfamide may be given I.V. push or as a continuous infusion. It is classified as an irritant, so the I.V. site should be monitored closely. A typical dose is 3.8 gm/m², which may be given in fractionated doses over 4-5 days. Side effects include the following: Moderate to severe nausea and vomiting which begin within two hours and continue for several days. Antiemetics should be given on an intermittent/frequent basis. Nausea/vomiting may be less if the medication is given more slowly. Bone marrow depression is seen in 1-2 weeks. Alopecia will occur. Ifosfamide can cause mental status changes (usually with high doses — 5 gm/m²/day). This is reversible with complete recovery. Other side effects include pulmonary edema, hypotension (helps to slow the rate), acidosis, and hemorrhagic cystitis, as previously mentioned.

A study using **Verapamil** (yes, the cardiac medication) is being trialed with VAD (Vincristine, Adriamycin, and Decadron). They are finding this combination decreases the drug resistance that sometimes develops with chemotherapy, particularly Adriamycin. This study is being trialed with multiple myeloma patients.

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Chemotherapy Update

Continued from Page 3

The dosage is 120 mg orally twice daily. Side effects include bradycardia, asystole, hypotension, heart failure, headache, dizziness, rash, peripheral edema, and constipation. What is quite exciting is that, clinically, once resistant tumors are now responding to therapy!

The last agent I want to discuss is *high-dose Methotrexate*. The term should be more appropriately named "ultra-high dose" methotrexate. The doses we are giving are up to 14-18 grams. The dose range is 400 mg/m² to 12 gm/m². The principle of high-dose Methotrexate works by the time-versus-concentration factor. The higher the dose and the longer you can expose the cancer cells to the chemotherapy, the greater the cell kill. We can do this with Methotrexate because we have the antidote Leucovorin. We can reverse the toxicities and rescue the cells by giving adequate doses of Leucovorin. The doses of Leucovorin are based on the Methotrexate levels drawn at 24 hours, 48 hours, and 72 hours post-Methotrexate infusion. As expected, the MTX level would be appropriately high at 24 hours and drop off once Leucovorin has begun.

You may see high-dose Methotrexate given for the following conditions: choriocarcinoma, acute leukemia, lymphoma, sarcomas (osteogenic, liposarcoma, rhabdomyosarcoma), carcinomas of the head and neck, breast, testes, and mycosis fungoides.

Methotrexate is largely excreted in the urine unchanged. Certain drugs interfere with the excretion of MTX, including ASA, sulfa drugs (Bactrim, Septra, Gantrisin), cephalothin (Keflin), NSAID (Motrin, Advil, Indocin, Ibuprofen), and phenytoin (Dilatin). The nurse administering MTX should check for possible interactions.

Guidelines for administering high-dose Methotrexate include the following:

1) Serum creatinine and BUN should be checked prior to each dose to ensure proper renal function.

2) Adequate hydration to include at least 1 liter D5 or 1/2 NS with 1-2 amps of NaHCO₃ before Methotrexate. The urine pH level is checked to maintain alkaline urine. If the pH falls below 7.0 an additional amp of NaHCO₃ should be added to the hydration fluid. Urine output should be two times normal. Strict I/O should be maintained and a Foley catheter placed if incontinence is a problem.

To assist in maintaining an alkaline urine, the oral agent Diamox (acetazolamide) may also be administered, usually 250 mg every 8

hours.

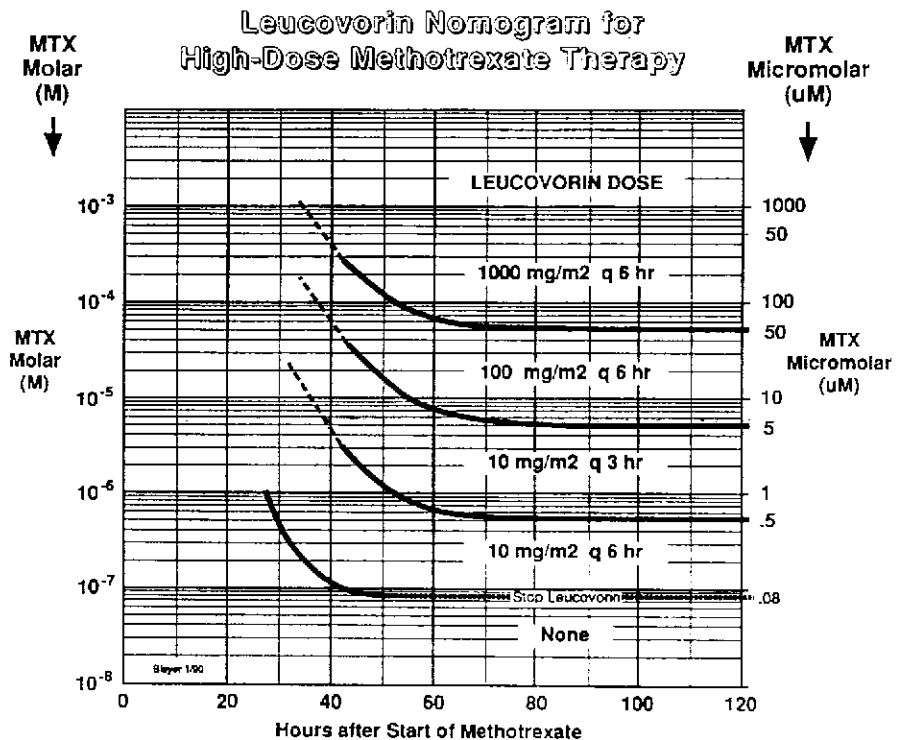
3) In general, Leucovorin (citrovorum factor, folic acid) should be started 24 hours after beginning Methotrexate, at doses of 10 mg/m² IV or PO every 6 hours. The IV route of administration should be used if the patient is vomiting or if there is any question about adequacy of gastrointestinal absorption or compliance.

4) A STAT serum creatinine level should be obtained 24 hours after starting Methotrexate. If the serum creatinine is greater than 50% of the baseline level, the dose of Leucovorin should be increased to 100 mg/m²

every 6 hours until the Methotrexate level result is known, and thereafter the Leucovorin dose should be adjusted according to the nomogram.

5) Plasma Methotrexate levels should be obtained daily and Leucovorin rescue continued until the plasma Methotrexate level is below 0.08 micromolar. If the plasma Methotrexate level is elevated, the Leucovorin dose should be increased according to the nomogram.

Use the following chart to calculate Leucovorin dosages if serum creatinine and/or MTX levels are high.



Courtesy of A. Bleyer, MD; Children's Hospital Medical Center

Case Example:

The serum MTX level at 48 hours returns at 8.5/uM. Refer to the nomogram and find that this value is between 10⁻⁵ and 10⁻⁶. Find this point on the graph and plot corresponding to the 48 hours. This would be considered critically high and the Leucovorin dose increased to 10 mg/m² every 3 hours.

Some other guidelines to use are: Serum methotrexate levels below 10⁻⁶ at 24 hours, - below 10⁻⁷ at 48 hours.

Side effects of HDMTX are similar to those seen with more common dosages. They include myelosuppression (with Nadir 6-9 days after therapy), stomatitis, diarrhea, and hepatic fibrosis. Neurologic signs and symptoms are seen more after brain irradiation and pneumonitis. Patients with pleural effu-

sion or pulmonary edema should not be given HDMTX, as it could lead to respiratory distress. Anuria is considered a medical emergency requiring dialysis. Other considerations include photosensitivity and increased sun sensitivity. Teach clients to use adequate sunscreen, but to avoid those which contain aminobenzoic acid.

Patients we have treated with HDMTX have done quite well. It is important to monitor those things listed and it is suggested to have written guidelines to assure proper monitoring by physicians and nurses.

I hope that this overview on some of the new chemotherapy agents and administrative methods has been interesting and helpful to you in your professional role as an oncology nurse.

Chemotherapy in the Ambulatory Care Setting

Judith Updegraff, RN, OCN
Virginia Mason Medical Center

What comes to my mind first when I think about chemotherapy in our ambulatory care setting is the laughter. We laugh with our patients and their families at reruns of old TV shows; we laugh at the latest antics of their kids and grandkids and our kids and grandkids; and, we laugh at the jokes we can share.

Of course, it's not all laughter. There are tears, pain, nausea and occasional vomiting, apprehension, questions, Portacaths and Hickmans from which you can't get a blood return, tiny little veins in which you are expected to give Adriamycin and about eight other IV meds., and a myriad of other problems which make giving chemotherapy a monumental challenge.

How do we make chemotherapy a positive experience for patients, their families, and our nurses? Our primary goal is that the drug(s) will be given in a safe and appropriate manner and that potential extravasations will be avoided. Of equal importance to us is our contribution toward helping the individual patient and family function optimally during this phase of the disease process.

The treatment area where chemotherapy and blood products are administered provides flexibility by offering both recliner chairs (in booths) and beds (in private rooms). The types of treatments delivered vary considerably with respect to complexity, length of time, and physical condition of the patient. This variety of beds and recliners allows control, dignity, and, for those who want or need it, auditory privacy. TVs are provided in private rooms to provide distraction and/or to help pass the time for those patients who are receiving long term infusions. Our set up provides the most flexibility from a staffing and patient-flow point of view.

In addition, our treatment area contains a large "mixing" room with a laminar flow hood, IV supplies, space for files and documentation, and reference materials. There is also a dirty utility room, a large wheelchair-accessible rest room, and a comfortable waiting area for families with magazines and refreshments.

We have juice, crackers, tea, coffee, and broth available for patients. We also have the

option of ordering a tray from the hospital cafeteria for those patients being treated over the lunch hour who wish to eat at that time.

The examination room area and the physicians' offices are on the same floor as the chemotherapy treatment area. It is in this area that the patients are seen on their treatment days by the physician and/or the OCN working with him.

This separation of areas allows the patients and their families to concentrate on asking questions and receiving information without associating the office area with the actual physical process of receiving chemotherapy.

On the other hand, the close proximity of the two areas promotes a collaborative approach among all the care givers. Information can be shared quickly and accurately and needed changes in treatment plans can be instituted immediately.

Nine of the twelve nurses who provide patient care have passed the ONS certification exam. Having a common base enables us to use the best available knowledge and judgment to promote the health and satisfaction of our patients and their families. We meet, as a group, on a regular basis to discuss problems related to patient care and nursing satisfaction and morale.

A "typical treatment day" for one of our patients involves three steps:

1) Laboratory work and other diagnostic tests if indicated.

2) Examination by the physician and/or the OCN working with him. At this time laboratory values are reviewed, physical exam is performed, chemotherapy teaching is done, and other medications are reviewed.

3) Chemotherapy treatment.

Since venous access is such a frequent problem, an assessment is made on the first visit. If a central venous catheter or implantable access device is indicated this information is passed on to the physician. This is especially considered if the treatment plan is an extended one and involves frequent laboratory work. There is another option which we have instituted with the majority of our mastectomy patients who are receiving adjuvant therapy. Rather than going to

the laboratory, they come to us for insertion of an angio-cath. We draw the necessary lab work, and then hep-lock the angio-cath so that it is in place for the chemotherapy treatment. This cuts down on the number of venipunctures for the patient and gives the nurse administering chemotherapy first choice of a suitable vein. We have used this system with a number of our patients who have difficult venous access. It has gotten us through some difficult treatment plans without requiring the patient to have surgical placement of a venous access device.

All of our nurses are knowledgeable about doses, mechanisms of actions, potential toxicities, and potential problems in the administration of chemotherapeutic agents. We are able to give the patients and their families information that addresses their concerns and questions about treatment and at the same time provide them with self-care strategies that address control and prevention of side effects. We spend as much time as possible talking with our patients and their families while administering their antiemetics and chemotherapy drugs.

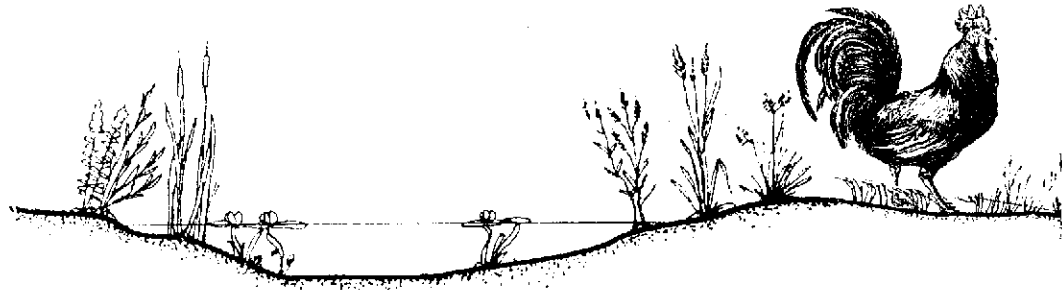
Institutional policies and procedures concerned with the safe handling, preparation, and disposal of chemotherapeutic agents are followed. Needless to say, both soap and gloves are used in large quantities.

Extravasation is a *very unusual* event but if it should occur we are prepared to deal with the problem. Using a kit designed in conjunction with our hospital pharmacy, we can treat it early so that undue harm to the patient is prevented or minimized.

There are many factors that contribute to burnout among oncology nurses. However, this has not become a problem among our nurses. Our patients and their families frequently verbalize their feelings about our importance to them and bring us treats or write us notes. We value each other. We know that we are good at what we do. We have a very strong support system that functions both in the work setting and away from work. I believe we have succeeded in making chemotherapy a positive experience for our patients, their families, and our nurses.

Providing For Cancer Needs in a Rural Setting

(also known
as Cancer Care
"In the Sticks")



Chemotherapy administration is only a small part of oncology nursing, but one that has major importance. The actual administration varies little from an urban to a rural setting, but the surrounding aspects of the care differ widely. Here on Whidbey Island, we are close to Seattle and Everett — many residents commute to those cities on a daily basis to work. At the same time, we are very much part of a rural community with small towns and wide open spaces. When a person starts chemo, we all know that he/she usually receives their treatment in an oncology center, hospital unit, or oncologist's office. What happens with the people who live in a rural area where these facilities are not available locally? From Whidbey, people have a choice of going to the Mount Vernon/Sedro Wooley, Everett, or Seattle areas for treatment. That can involve travelling 40 to 50 miles plus a ferry ride — one way! Not a fun trip when you aren't feeling well; and transportation costs can get expensive in a short time.

At Whidbey General Hospital, we saw this as a problem, and looked for a solution. There were nurses who were knowledgeable in chemotherapy, had attended the ACS courses and were interested in taking care of cancer patients. But as a smaller hospital without an oncologist on staff, most patients had to be referred off island for follow-up medical oncology care and subsequent chemotherapy. As a response to community requests, an outpatient medical care facility was planned for clients to receive chemotherapy, as well as various support services such as IV antibiotics, blood and blood product infusions.

The differences between providing chemotherapy services in the rural versus urban setting is not so much the physical administration but the associated circumstances. At Whidbey General, we do not have a full time medical oncologist, but one that comes from Mt. Vernon one day a week to provide ongoing patient evaluation and treatment. When there is a need for overnight inpatient chemotherapy, the oncologist does not see the patient on the day of discharge, but leaves standing orders for discharge via the Oncol-

ogy Clinical Nurse Specialist. On the days the oncologist does not come over, standing orders are written for the specific patient regarding symptoms and lab results.

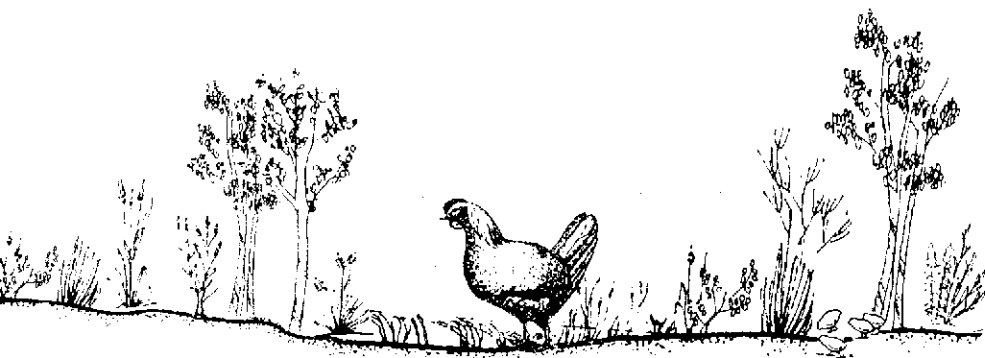
Because there is not a specific oncology unit, and chemotherapy is generally given once a week, there is a great deal of pre-planning to be done. To establish a nursing staff, two nurses were hired to alternate weekly clinics and cover the clinic five days a week. They staff the clinic, providing the necessary skills in the actual administration and clinic functions under the supervision of the Oncology Clinical Nurse Specialist. The nurses are available by phone to the patients throughout the week to answer questions and assist with associated symptom management. Some people with cancer who are seen off island come to the hospital laboratory for blood draws. Previously, those who had venous access devices were routed through the E.R. for a RN to perform this service. They now come to Medical Ambulatory Care for this service, and are seen on a more timely basis rather than through the E.R. where their needs are often not as high a priority. The two nurses staffing the clinic are responsible for much of the coordination between scheduling appointments and assuring that the chemotherapy agents are available.

On the inpatient side, there is not a designated oncology unit with experienced chemotherapy nurses. Part of my responsibility as the clinical specialist is to be a consultant to staff nurses in the administration of the chemo when we have an overnight infusion, assist with the symptom management, and discharge the patient according to the standing orders left by the medical oncologist. A major component of this process is to assist with the coordination of medications and staff. When I find there is a patient to be admitted for inpatient care, the nursing supervisor is notified so that nursing staff knowledgeable in working with chemotherapy can be arranged to cover those shifts. The Pharmacy is also alerted so the needed drugs are available, as well as a pharmacist to mix them.

In a smaller facility Pharmacy has some

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special needs that we have to accommodate. Because, like nursing, oncology is a specialty in pharmacy, not all of the pharmacists are experienced or interested in mixing those drugs. For that reason, the head pharmacist is alerted when there is a patient scheduled for chemo, so there is adequate staffing. The other problem is the expense of having some of these drugs in stock. The arrangement was also made, however, to give the pharmacy 24-48 hour notice of drugs needed so they can be ordered and delivered. Housekeeping has also been provided with additional education about handling chemotherapy waste.

Laboratory operations require some extra coordination and time, since some standard oncology tests need to be sent off island for processing. Scheduling of C.T. scans can also be tricky since the scanner is not at the hospital on a daily basis. The overall goal of the scheduling is clearly to try and tailor it to the patient's needs — to eliminate as many unnecessary trips as possible.

One of the biggest advantages of providing this service locally is that we are knowledgeable of the local support resources. Seeing people on a frequent basis, whether for a blood draw prior to an off-island appointment or when they come in for treatments, allows us to assess family and patient support needs and help access the community resources. This might involve making a Home Health Care referral, coordinating with Navy Relief at the local Navy Base, or calling Senior Services for chore help. An example of inter-agency cooperation was the case of a young woman being seen in Seattle at a large cancer clinic. Her treatment involved a five day stay in Seattle, and required her to leave her newborn at home. With the assistance of the Navy Relief, her care has been coordinated on a local level, including child care for her baby. It is also not unusual to be called about someone requiring help with transportation to treatments, and our familiarity with local services enables us to connect them with the local ACS transportation group.

Though the initial emphasis for Medical Ambulatory Care has been on providing medical oncology care, we have needed to be versatile to support the varied needs of the

community. For that reason, the facility is available for all the physicians on staff. Services provided are closely related to oncology needs, as they include chemotherapy, blood and blood product transfusions, IV antibiotics, as well as a place for bone marrow and liver biopsies to be done. Understandably, some people who have been seeing an oncologist in Seattle or Everett may be reluctant to give up that relationship, but are finding the trip increasingly difficult. The Medical Ambulatory Care unit has been designed to enable the person to receive care locally by having their local physician order the needed care. As health care makes the transition to more frequent ambulatory care, the Medical Ambulatory Care/Oncology Care unit provides services for oncology patients not formerly available. As a new program, ongoing evaluation will indicate other ways to meet the needs of the changing community.

Contrary to some peoples' perceptions, cancer care "in the sticks" can be as up to date as the most modern research center. The provision of chemotherapy and related aspects of oncology care is challenging in the rural setting, as it often requires a little more coordination and consultation. On the smaller level, however, we are able to provide more individualized personal care by providing a variety of services for cancer patients — close to home.



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Chemotherapy: Continuous Home Infusion

Suzanne Nemiroff, R.N., B.S.N., O.C.N.
Caremark Homecare

High Tech Chemotherapy Infusion in the home is a growing choice of therapy with benefits of increased antitumor efficacy and/or decreased toxicity. Home therapy allows the patient greater independence in their care, to be in familiar surroundings, and lower hospital costs. Most importantly, the development of new long-term access catheters and portable infusion devices have enhanced the patient's ability to receive their therapy safely, conveniently, and accurately at home.

The advent of the new technology has created a growing number of home infusion therapy companies. The continuous home chemotherapy they provide have the following benefits in the course of treatment:

1) It allows malignant cells constant chemotherapy exposure and cell destruction through all phases of the cycle;

2) The patient tolerates larger doses with less toxicity when infused over a longer period of time;

3) There is increased chemotherapy exposure to the tumor cell membrane and malignant cells which may increase effectiveness. This proves important because of the drug's short half life. For example, Fluorouracil (5FU) has a half life of ten minutes.

Several chemotherapy agents are administered continuously in the home with the assistance of the infusion therapy company. At CAREMARK most of our experience has been with 5FU and Adriamycin. 5FU and Adriamycin are also given intra-arterially in hospital settings only.

For instance, 5FU, an antimetabolite, is commonly administered continuously to patients with metastatic colorectal cancer, the second most common cause of cancer-related deaths in the United States. A colorectal tumor can usually be resected but ultimately half the cases need further treatments to metastasis. The reported median survival period for colorectal cancer patients with continuous 5FU infusion is six to eleven months.* A typical protocol treatment for 5FU is 200-300 mg/M²/day for five days, off therapy for two

days, on five days, or a six-week continuous infusion of 5FU with two weeks off therapy. Intravenous access may be peripheral, although a central line is recommended to prevent phlebitis and needle dislodgement. Patients are evaluated weekly by the physician and the course of treatment determined by patient's lab results and progress. Common side effects are stomatitis, hand-and-foot syndrome, and diarrhea, all easily managed with brief "holidays" off 5FU and subsequent dose reduction. Continuous 5FU chemotherapy is also being used in the treatment of renal cell cancer and metastatic breast cancer.

Adriamycin, an antibiotic, with a half life of 17 hours, is now more frequently being given continuously in the home. This chemotherapy must be given via a central venous catheter due to the risk of extravasation and potential necrosis. If a patient has a Port-a-cath, it is imperative to have the patient/caregiver or Registered Nurse evaluate the site daily or more frequently for correct needle placement. Adriamycin is given in smaller doses typically 60mg/M² over 96 hours, for three to four weeks. This has decreased patient side effects of nausea, vomiting, and myelosuppression. Due to the potential for cardiotoxicity, Adriamycin has a cap on the total dose a patient can receive of less than 550mg/M². This antineoplastic agent is used primarily in treatment of sarcomas, lymphomas, and various types of carcinomas.

There are several disciplines involved in making this therapy successful and safe at home. It involves the medical oncologist, homecare and hospital oncology nurse, pharmacist, and social worker. The input from the health care team helps identify the patient as an appropriate candidate for home therapy.

The patient or caregiver is instructed on how to care for the intravenous catheter and how to monitor it for signs of complications. Complete directions are given regarding the specific pump to be used: functions, alarms, and handling. The patient/caregiver should

be able to demonstrate pump functions, connection and disconnection of tubing, and line flushing technique, if indicated. However, it is more common for the nurse to connect the patient in the hospital or clinic and disconnect the patient from the pump and flush the catheter at home. At CAREMARK, a 24-hour nursing service is available to the patient for questions and concerns. Common concerns and expectations are reviewed with the patient before discharge from the hospital or at home. Proper handling of the chemotherapy and needles are reviewed with the patient/caregiver. It is recommended that needles and toxic waste be picked up by the home care agency or taken to the hospital for disposal.

There are several external infusion pumps developed for the ambulatory patient. These include the battery powered peristaltic pumps (Infumed 200/300 Deltec-Pharmacia and Pancretec pump), the syringe pump (Auto Syringe or Graseby pump), and the balloon pump (Travenol Infusion). These come in a variety of sizes, weights, and prices. When evaluating a pump for uninterrupted therapy, consider stability and compatibility of the medication, and volume and rate capacity with which the patient's prescribed medication is to be infused. Uninterrupted therapy for five days results in lower costs and contributes to the patient's ease of administration.

The availability of high tech infusion pumps and long-term intravenous catheters has proven to be successful and safe. Documented facts have indicated that ambulatory infusions are significantly less expensive than inpatient infusion therapy. Usually, most insurance companies including Medicare and Medicaid will reimburse for continuous home chemotherapy. Many patients and their families prefer ambulatory infusion therapy, as it provides the patient a time at home in familiar surroundings and is less disruptive to their lifestyle.

*Hansen, R. et. al., Continuous Systemic 5-Fluorouracil Infusion in Advanced Colorectal Cancer: Results in 91 Patients. *Journal of Surgical Oncology*. 1989; 40: 177-181

Clinical Practice Review

Cancer Rehab: A Case Study

Carla Jolley, RN, OCN
Community Home Health Care
Special Oncology Services

Cancer rehabilitation is developing both as a specialty and a philosophy of care for cancer patients. The aim is to improve the quality of life for long term survivors of cancer and those currently dealing with the disease. The interdisciplinary team works together to implement a comprehensive plan of care. The nurse's role in cancer rehabilitation is one of reducing the extent to which the cancer-related disability interferes with their function in every day life. This case study is an example of how a rehabilitative philosophy can be integrated into oncology care in the home care setting.

Mr. M. was diagnosed with malignant melanoma in the left eye in 1986, at this time the left eye was removed and a prosthesis implanted. In 1987, he was experiencing back pain which he believed to be muscle spasms. In April of 1988 after increasing weakness the patient underwent a series of tests showing malignant melanoma in the spine. At this time he was told he had less than a year to live.

Gradually Mr. M. became significantly more disabled with his disease. He remained working as a youth counselor until January 1989. He had three teen-age daughters. At the time he was admitted to the home health

care team in March he had a total of six spinal tumors and liver metastases. He had experienced loss of use of the left leg and loss of sensation but had just recovered about 85% after initiation of steroid therapy.

The nurse first addressed pain management, time-released oral morphine no longer was keeping him comfortable. The patient was started on continuous subcutaneous morphine. The patient's wife was taught management of the pump and site rotation. They managed well and he obtained good pain control. The nurse also addressed bowel management and the use of nutritional supplements. A foley catheter was eventually placed and the family was taught how to do foley care. The nurse also coordinated the other team members as needs were identified.

After several weeks there was an increased loss of motor function and a home health aide was brought in to do bathing three times a week. Mr. M. was originally able to use the walker but eventually became bed ridden. The occupational therapist then was consulted and taught dependent bed mobility and dependent bathing. The occupational therapist also addressed equipment needs and arranged for a hospital bed and

commode. The physical therapist was involved in setting up a realistic exercise program and adapting it to Mr. M.'s changing physical status. The PT's goals in the last course of Mr. M.'s illness addressed teaching the family range of motion, massage for edema and use of the bed trapeze. Mr. M. still desired to participate in his surroundings and wanted to sit on the couch so they elevated the legs and taught the family sliding board transfers.

The social worker helped to address long term planning needs and family issues. The insurance boundaries were very strict and it took creative management to meet needs.

The community was mobilized. Neighbors and friends scheduled to stay with the patient so the wife could continue to work part time and keep her insurance benefits. A volunteer massage therapist helped with comfort measures.

They were also able to manage at home until his death. He continued to actively participate in his environment until his death. Goals were consistently adjusted and achieved. For Mr. M. cancer rehabilitation allowed him to be in control and maintain a quality of life with which he was comfortable.

Plicamycin Controversy

Gail Dix, R.N., B.S.N.
Oncology Nurse Clinician
Central Washington Hospital
Wenatchee, WA 98801

Recently, we have experienced a surge in the ongoing controversial issues surrounding plicamycin administration. After pursuing this problem with our hospital pharmacy, and after contacting several Puget Sound hospital pharmacies and Oncology Clinical Nurse Specialists, the controversy seems to linger as to the classification of plicamycin and the administration guidelines pertinent

to the drug.

The manufacturer's drug representatives continue to classify plicamycin as "both" a vesicant and an irritant. If mixed in a syringe or partial fill as a concentrated solution, the drug is administered as a vesicant. However, if mixed in a liter of fluid, it is feasible to classify plicamycin as an irritant rather than a vesicant. Careful monitoring is necessary when administering it as a 4 to 6 hour infusion. Blood return and the I.V. site should be checked frequently throughout the infusion, according to individual hospital policy.

The community standard throughout the Puget Sound area for plicamycin is to administer the drug I.V. push through the side arm of a compatible intravenous solution or in a 50-100 ml partial fill over 15 to 60 minutes. Only one hospital mentioned admini-

stering it as a one liter infusion over 4-6 hours.

The manufacturer's recommendation for plicamycin is to administer in one liter of fluid over 4-6 hours. However, plicamycin is most often given for treatment of hypercalcemia rather than for specific malignancies, and we therefore encounter smaller doses of the drug. Severe G.I. symptoms, bleeding syndromes, etc. have not been a common problem when the drug is given for hypercalcemia. It is time for us to encourage the drug manufacturer to broaden the administration guidelines for plicamycin so as to prevent the ongoing dilemma the pharmacists face in mixing, while providing nurses a safe and efficient administration technique, and patients a safe and cost effective manner in which to receive plicamycin.

Continuing Education

Challenges & Opportunities in Cancer Nursing

Sponsored by Good Samaritan Cancer Center and Outreach Services,
Good Samaritan Medical Center
February 16-17, 1990
Sunburst Resort Hotel, Scottsdale, Arizona
Cost: \$80 (after January 25 - \$95); Students \$50
Contact Hours: Pending
Contact: 1-800-443-5972
Teri Quesnell or Deborah Todd
Good Samaritan Regional Medical Center
Outreach Services - 12A
1111 East McDowell Rd.
P.O. Box 2989
Phoenix, AZ 85060-2989

Horizons in Northwest Oncology Nursing

Sponsored by: PSONS
February 23-24, 1990
Bellevue Commons; Bellevue, WA
Cost: TBA
Contact Hours: Pending
Contact: 462-5385
PSONS
Box 85058
Seattle, WA 98145-1058

Accessing The 90s

BAVAN's 4th Annual Conference
March 12-13, 1990
San Francisco, CA
Cost: Before Feb. 7 - \$280
After Feb. 7 - \$310
Contact: 415-327-9430
Bay Area Vascular Access Network
800 Menlo Ave.
Suite 115
Menlo Park, CA 94025

Monumental Steps for Oncology Nursing

Sponsored by: ONS
May 16-19, 1990
Washington, D.C.
Cost: \$175 member (by 4/15/90)
\$255 non-member
\$100 Students and Retired Nurses
Contact Hours: Pending
Contact: 412-921-7373
Oncology Nursing Society
Dept. 1889
Pittsburgh, PA 15278-1889

Congratulations!!

Congratulations to **Betty Gallucci, RN, PhD**, who has been awarded the 1990 Ross Excellence in Cancer Nursing Education Award. She was nominated jointly by the chapter and the *Oncology Nursing Forum* Editorial Board. Ryan Iwamoto and Brenda Nevidjon prepared the nomination packet, and thank all the chapter members who provided input.

ATTENTION

All PSONS Members
(Especially Board members &
Committee Chairpersons)

The deadlines for items to be included in the 1990 Newsletter issues are as follows:

Spring, 1990 • March 2
Summer, 1990 • June 1 (post-ONS congress issue)
Autumn, 1990 • August 3
1990 Special Year-End Issue • September 28
Winter, 1991 • December 10

Please submit your calendar of meetings for 1990 as soon as possible and all committee reports throughout the year by the above dates.

Thanks!

Attention Committees!

Your meeting schedule can appear in every issue!! Please submit your calendar of events prior to each deadline (as listed elsewhere in this newsletter) so that we may keep our membership informed! Thanks!

• FEBRUARY •

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

February

- 5 - PSONS Board Meeting
- 5 - Symposium Committee Meeting -
4:30 - 5:30 pm, Swedish Hospital B-Floor
Conference Rm. #1. (Contact Judy Kornell at
467-5021 to confirm date/time)
- 15 - Government Affairs Committee - 7 pm,
8621 5th Ave. NE
(Call 525-3727 for additional information.)
- 19 - Symposium Committee - 4:30 - 5:30 pm
- 23-24 - PSONS Symposium

• MARCH •

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

March

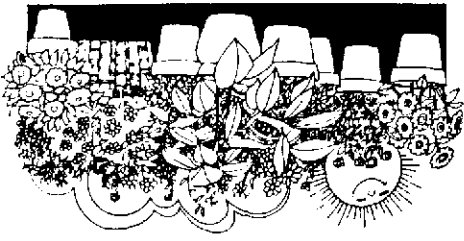
- 2 - Spring Newsletter Deadline
- 15 - Government Affairs Committee - 7pm
(see Feb. 15 for location information)

• APRIL •

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

April

- 9 - PSONS Boards Meeting
- 18 - PSONS Chapter Meeting (notification to be
sent)
- 19 - Government Affairs Committee - 7 pm
(see Feb. 15 for location information)



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