BC Cancer Agency
CARE & RESEARCH

Systemic Therapy Update

Volume 11, Number 2 *for health professionals who care for cancer patients* February 2008
Website access at http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/stupdate.htm

INSIDE THIS ISSUE

EDITOR'S CHOICE

FLUOROURACIL CONTINUOUS INFUSION: PREVENTIVE MEASURES FOR MEDICATION ERRORS

Based on the recommendations of the Institute for Safe Medication Practice (ISMP) Canada, the BC Cancer Agency will be revising all protocols with fluorouracil (5FU) continuous infusions to minimize the potential for medication errors. Total infusion volume and infusion rate will be specified for each protocol to avoid reliance on complex calculations at the point of medication administration. This information will be available in the protocol summary, provincial pre-printed order (PPPO) and pharmacy label.

Potential for Medication Errors

Currently, the pharmacy preparation for 5FU continuous infusion involves calculating a dose that compensate for the drug remaining in the balloon and tubing of the infusors (i.e., overfill volume). This has several potentials for medication errors:

1. There is inconsistent information on the protocol, PPPO, and medication label. Also, the physician cannot specify the infusion rate at the time of ordering because there is no standard in the choice of infusion device and how it is filled for a particular protocol.
2. The use of overfill volumes creates significant complexity, introducing opportunities for preparation errors by pharmacy and misinterpretation of the medication label by nursing.

Preventative Measures with New Preparation Standard

Several changes will be brought into place to overcome these problems:

1. Pharmacy will standardize the preparation of 5FU continuous infusion based on the dosage and rate of administration of the particular protocol, and the ambulatory elastomeric infusor that can hold the volume with the minimal variability infusion rate (see table).
2. No programming is needed for elastomeric infusors.

3. The protocols, PPPO's and medication labels will have consistent information which includes the intended rate of administration in mL/hour.
4. Overfill volume will no longer be used. The infusor will hold the required volume of drug and deliver it over the intended time frame. At the end of the infusion, the residual volume (1-3 mL) will represent less than 5% of the total volume or 1.5% variation in dosing.

Table. Infusion duration and corresponding Baxter infusor

Infusion duration	***Infusor type***	***Infusion rate***	***Volume***		***Protocols***
			Total	**Residual (% of total)**	
46 h ≤ 4400 MG > 4400 MG	 SV2 LV5	 2 mL/h 5 mL/h	 92 mL 230 mL	 1 mL (1.09%) 3 mL (1.30%)	UGIAJFFOX, GIAJFL, GIAVFL, UGIFFIRB, UGIFFOXB, GIFOLFIRI, UGIFOLFOX, UGIRAJFFOX
48 h (2 d) ≤ 4600 MG > 4600 MG	 SV2 LV5	 2 mL/h 5 mL/h	 96 mL 240 mL	 1 mL (1.04%) 3 mL (1.25%)	GIFUC, GIFUINF
72 h (3 d)	NO INFUSOR				GIEND01, HNFUP
96 h (4 d)	LV2	2 mL/h	192 mL	3 mL (1.56%)	GIEFUPRT, GIFUART, GUFUPRT, HNCAFRT, HNFURT, HNFUP
120 h (5 d)	LV2	2 mL/h	240 mL	3 mL (1.25%)	UGIGDCF
168 h (7 d)	LV1.5	1.5 mL/h	252 mL	3 mL (1.19%)	UGIGAVECF, GIGECF, GIRINFRT,

SAFETY-ENGINEERED NEEDLES AND LUTEINIZING HORMONE-RELEASING HORMONE (LHRH) AGONISTS

WorkSafeBC's Occupational Health and Safety Regulations on Safe Needles come into effect 1 January 2008 and are intended to reduce the risk of needle stick injuries. These regulations require safety-engineered needles be used for any medical procedure that involves the use of hollow bore needles, including the administration of medications. The regulations apply to all workplaces in the province including medical offices, clinics, hospitals and patients' homes if a medical practitioner is administering the medication. Safety-engineered needles must be used for medication administration unless this use is not clinically appropriate because either the medical practitioner or the patient would be at increased risk.

The LHRH agonist products are affected by these changes because they are available as pre-filled syringes for injection:

Drug	*Brand*	*Manufacturer*	*Route*	*Safety-engineered needle*
leuprolide	LUPRON®	TAP Pharmaceuticals	IM	yes
goserelin	ZOLADEX®	AstraZeneca	SC	yes
leuprolide	ELIGARD®	Sanofi-Aventis	SC	available April 2008
buserelin	SUPREFACT®	Sanofi-Aventis	SC	to be evaluated

Until all LHRH agonist products are available with a safety-engineered needle, where clinically appropriate:

1. new patients should be started on products that are compliant with the new WorkSafeBC regulations (see table above)
2. patients already stabilized on ELIGARD® or SUPREFACT® or who are enrolled on an ongoing clinical trial with these products can continue to have them administered until ELIGARD® with a safety-engineered needle becomes available and the SUPREFACT® applicator system can be evaluated by the BC Cancer Agency and the Provincial Health Services Authority (PHSA) Safety Advisor.

CANCER DRUG MANUAL

"Hair Loss due to Chemotherapy" Patient Handout has been developed and added to the Coping with Cancer section of the web site (www.bccancer.bc.ca/PPI/copingwithcancer/symptoms). The handout provides details about what to expect, information on reimbursement for wigs and how to cope with hair loss. Expert review was provided by Judy Oliver, Dawn Annable, and Dr. Susan Ellard. See the January 2006 issue of the Systemic Therapy Update for further details on how health care professionals can help patients cope with the effects of hair loss.

Megestrol Monograph and Patient Handout have been completely revised. Expert review was provided by Drs. Nicol Macpherson (Breast Tumour Group) and Elissa McMurtrie (Gynecology Tumour Group). Megestrol tablets are approved by BCCA for use only in breast cancer, prostate cancer and endometrial cancer. Appetite stimulation or symptom management are not reimbursed by the BCCA. Changes include more details on adrenal suppression in the monograph and the addition of elevated blood sugar as a side effect in the handout.

Chemotherapy Preparation and Stability Chart - Vinblastine has been revised:

- expiry time when prepared in syringe changed to 4 hours at room temperature or refrigerated
- expiry time when prepared in infusion container (e.g., minibag) changed to 24 hours whether at room temperature or refrigerated

HIGHLIGHTS OF CHANGES TO PROTOCOLS, PRE-PRINTED ORDERS AND PATIENT HANDOUTS

Breast Cancer Treatment – Patient Handouts: A number of new patient information handouts have been developed. This is a continuing effort to expand the scope of patient information available for the BC Cancer Agency chemotherapy protocols.

Gastrointestinal Cancer Treatment The Gastrointestinal Tumour Group has introduced a number of changes including:

1. Gastric cancer: two new palliative treatment protocols (GIGDCF, GIGAVECF) and one peri-operative protocol (GIGECC, an alternative to GIGECF)
2. Colorectal cancer: a new adjuvant protocol for stage III rectal cancer (UGIRAJFFOX), revised number of treatment cycles for bevacizumab therapy (UGIFFOXB, UGICIRB, UGICOXB, UGIFFIRB). Further changes in the combined modality protocols for adjuvant treatment of rectal cancer are currently in progress.

LIST OF NEW AND REVISED PROTOCOLS, PRE-PRINTED ORDERS AND PATIENT HANDOUTS

BC Cancer Agency Protocol Summaries, Provincial Pre-Printed Orders (PPPOs) and Patient Handouts are revised periodically. New and revised protocols, PPPOs and patient handouts for this month are listed below. Protocol codes for treatments requiring "Compassionate Access Program" (previously Undesignated Indication Request) approval are prefixed with the letter **U**.

NEW PROTOCOLS, PPPOS AND PATIENT HANDOUTS (AFFECTED DOCUMENTS ARE CHECKED):

CODE	Protocol	PPPO	Patient Handout	Protocol Title
BRAJDAC	☐	☐	☑	Adjuvant Therapy for Breast Cancer using Cyclophosphamide, Doxorubicin and Docetaxel
UBRAJDC	☐	☐	☑	Adjuvant Therapy for Breast Cancer Using Docetaxel and Cyclophosphamide.
BRAVAC	☐	☐	☑	Palliative therapy for metastatic breast cancer using Doxorubicin and Cyclophosphamide.
BRAVCAP	☐	☐	☑	Therapy for Metastatic Breast Cancer Using Capecitabine.
BRAVDCAP	☑	☑	☑	Palliative Therapy for Metastatic Breast Cancer Using Docetaxel and Capecitabine.
BRAVDOC7	☐	☐	☑	Palliative Therapy for Metastatic Breast Cancer using Weekly Docetaxel.
BRAVGEMD	☐	☐	☑	Palliative Therapy for Metastatic Breast Cancer using Gemcitabine and Docetaxel
UBRAVGEMP	☑	☑	☑	Palliative Therapy for Metastatic Breast Cancer Using Cisplatin and Gemcitabine
BRAVGEMT	☐	☐	☑	Palliative Therapy for Metastatic Breast Cancer using Gemcitabine and Paclitaxel.
BRAVTRAP	☐	☐	☑	Palliative Therapy For Metastatic Breast Cancer Using Trastuzumab And Paclitaxel As First-Line Treatment For Recurrent Breast Cancer
BRLAACD	☐	☐	☑	Treatment of Locally Advanced Breast Cancer using Doxorubicin and Cyclophosphamide followed by Docetaxel (TAXOTERE®)
ENMITO	☐	☑	☑	Treatment Of Adrenal Cortical Cancer Using Mitotane
UGIGAVECF	☑	☑	☐	Palliative Therapy for Metastatic or Locally Advanced Gastric, Esophagogastric Cancer Using Epirubicin, Cisplatin and Infusional 5-Fluorouracil
UGIGDCF	☑	☑	☐	Palliative Treatment of Metastatic or Locally Advanced Gastric, Esophagogastric Junction, or Esophageal Adenocarcinoma using with Docetaxel, Cisplatin and Infusional Fluorouracil

CODE	Protocol	PPPO	Patient Handout	Protocol Title
GIGECC	☑	☑	☐	Perioperative Treatment of Resectable Adenocarcinoma of the Stomach, Gastroesophageal Junction or Lower 1/3 Esophagus using Epirubicin, Cisplatin and Capecitabine
UGIRAJFFOX	☑	☑	☐	Adjuvant Combination Chemotherapy for Stage III Rectal Cancer Using Oxaliplatin, 5-Fluorouracil and Folinic Acid (Leucovorin)

REVISED PROTOCOLS, PPPOS AND PATIENT HANDOUTS (AFFECTED DOCUMENTS ARE CHECKED):

CODE	Protocol	PPPO	Patient Handout	Changes	Protocol Title
BRAV7	☐	☑	☐	*Lab scheduling clarified*	Palliative Therapy for Metastatic Breast Cancer using Weekly Doxorubicin
BRAVCAD	☑	☑	☐	*Code changed to BRAVDCAP*	Palliative Therapy for Metastatic Breast Cancer Using Docetaxel and Capecitabine
BRAVCAP	☐	☐	☑	*Order for serum creatinine reformatted*	Therapy for Metastatic Breast Cancer Using Capecitabine
BRAVGEMD	☐	☑	☐	*Scheduling of return appointments clarified*	Palliative Therapy for Metastatic Breast Cancer using Gemcitabine and Docetaxel
BRAVGEMT	☐	☑	☐	*Scheduling of return appointments clarified*	Palliative Therapy for Metastatic Breast Cancer using Gemcitabine and Paclitaxel
BRAVPG	☑	☑	☐	*Code changed to BRAVGEMP*	Palliative Therapy for Metastatic Breast Cancer Using Cisplatin and Gemcitabine
ENMITO	☑	☐	☐	*Tests revised, dosing for fludrocortisone and cortisone clarified, hypoadrenalism in Precautions revised*	Treatment of Adrenal Cortical Cancer with Mitotane
UGICIRB	☑	☐	☐	*Number of treatment cycles revised*	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Irinotecan, Bevacizumab and Capecitabine
UGICOXB	☑	☐	☐	*Number of treatment cycles revised*	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Oxaliplatin, Bevacizumab and Capecitabine
UGIFFIRB	☑	☐	☐	*Number of treatment cycles revised*	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Irinotecan, Fluorouracil, Folinic Acid (Leucovorin) and Bevacizumab
UGIFFOXB	☑	☐	☐	*Number of treatment cycles revised*	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Oxaliplatin, 5-Fluorouracil, Folinic Acid (Leucovorin) and Bevacizumab

CODE	Protocol	PPPO	Patient Handout	Changes	Protocol Title
GIGECF	☑	☑	☐	*Exclusions and cardiac toxicity added to protocol; dexamethasone dose, hydration infusion time, fluorouracil infusion time clarified in PPPO*	Perioperative Treatment of Resectable Adenocarcinoma of the Stomach, Gastroesophageal Junction or Lower 1/3 Esophagus using Epirubicin, Cisplatin and Infusional Fluorouracil
GUBEP	☑	☑	☐	*Days 9 and 16 dosing option for bleomycin deleted*	Therapy for intermediate risk non-seminomatous testicular cancer using bleomycin, etoposide and cisplatin
UGUSUNI	☐	☐	☑	*Scheduling of each cycle clarified*	Palliative Therapy for Renal Cell Carcinoma Using Sunitinib (SUTENT®)
HNTSH	☑	☐	☐	*Eligibility revised*	Radioiodine Imaging in Patients with Thyroid Cancer using Thyrotropin Alpha
LUNAVP	☑	☐	☐	*ANC for dose modification clarified*	Advanced Non-Small Cell Lung Cancer (NSCLC) with Cisplatin and Vinorelbine
LYABVD	☑	☐	☐	*Deleted HD7 dose modifications*	Treatment of Hodgkin's Disease with Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine
ULYALEM	☑	☑	☐	*Lab tests, format and preparation instructions revised*	Treatment of Fludarabine-Refractory B-Chronic Lymphocytic Leukemia (B-CLL) and T-Prolymphocytic Leukemia (T-PLL) with Alemtuzumab
PUCAT	☐	☑	☐	*ANC clarified for dose modifications*	Primary Treatment of Cancer of Unknown Primary Origin Using Carboplatin and Paclitaxel
USAAVGS	☐	☐	☑	*Scheduling of each cycle clarified*	Second Line Treatment of Advanced C-kit Positive Gastrointestinal Stromal Cell Tumours (GIST's) After Imatinib Using Sunitinib (SUTENT®)
SAVAC	☐	☑	☐	*Creatinine added to return appointment section*	Adjuvant therapy for newly diagnosed Ewing's sarcoma/peripheral neuroectodermal tumour (PNET) or rhabdomyosarcoma using Vincristine, Doxorubicin and Cyclophosphamide (this is alternated with SAIME)

PROVINCIAL SYSTEMIC THERAPY PROGRAM POLICIES

Labelling of Vinca Alkaloid Preparations (Policy V-40) Wording of warning label for vinca alkaloid preparations has been revised to conform with the WHO recommendations to below:

"WARNING: FOR INTRAVENOUS USE ONLY – FATAL IF GIVEN BY OTHER ROUTES"

This warning is applicable to vincristine dispensed in minibag and other vinca alkaloids dispensed in syringes.

COMMUNITIES ONCOLOGY NETWORK (CON) – REFERRAL FORM REVISED

Oncologist's Referral Form for CON Chemotherapy has been revised to include the followings to the list of healthcare professionals who need to receive the referral information:

- CON supervising physician (community oncologist or general practitioners in oncology [GPO])
- chemotherapy nurse and pharmacist at the CON hospital
- patient's general practitioner

An indication of BCCA Compassionate Access Program (CAP) approval status has also been added.

The referral form is completed by the BCCA oncologist and this revision aims to further facilitate the transfer of patient care from a BCCA regional centre to the treating healthcare providers at the CON community cancer centre. Contact information for the various health care providers at the CON centres is on the BCCA website (www.bccancer.bc.ca/RS/CommunitiesOncologyNetwork/cservices).

CONTINUING EDUCATION

Oncology Nursing Conference – "Cancer Care Update 08", April 4-5, 2008, Richmond BC.

Mark this event on your calendar for April 4-5! Further information about this upcoming conference and how to register will be available on the website at www.cancercare08.ca

After attending this day an RN will be able to:

- Describe new and emerging trends in the treatment of common cancers.
- Identify implications of these treatments and trends for patient care and nursing practice.
- Apply key approaches to effectively communicate with individuals and families affected by cancer.
- Outline nursing interventions to address the impact of cancer and its treatment on sexual health.
- Plan strategies to assist cancer survivors in moving through the recovery process.
- Apply self-care measure to nourish personal and professional health and wellbeing.

WEBSITE RESOURCES

The following are available on the BC Cancer Agency website (www.bccancer.bc.ca) under the Health Professionals Info section:

REIMBURSEMENT AND FORMS: BENEFIT DRUG LIST, CLASS II, COMPASSIONATE ACCESS PROGRAM (UNDESIGNATED INDICATION)	www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Forms
CANCER DRUG MANUAL	www.bccancer.bc.ca/cdm
CANCER MANAGEMENT GUIDELINES	www.bccancer.bc.ca/CaMgmtGuidelines
CANCER CHEMOTHERAPY PROTOCOLS	www.bccancer.bc.ca/ChemoProtocols
CANCER CHEMOTHERAPY PRE-PRINTED ORDERS	www.bccancer.bc.ca/ChemoProtocols under the index page of each tumour site
SYSTEMIC THERAPY PROGRAM POLICIES	www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies
UNCONVENTIONAL CANCER THERAPIES MANUAL	under Patient/Public Info, Unconventional Therapies

IN TOUCH	www.bccancer.bc.ca	bulletin@bccancer.bc.ca
BC CANCER AGENCY	(604) 877-6000	Toll-Free 1-(800) 663-3333
COMMUNITIES ONCOLOGY NETWORK	Ext 2744	jvenkate@bccancer.bc.ca
EDUCATION RESOURCE NURSE	Ext 2638	nursinged@bccancer.bc.ca
NURSING PROFESSIONAL PRACTICE	Ext 2623	ilundie@bccancer.bc.ca
PHARMACY PROFESSIONAL PRACTICE	Ext 2247	gconcon@bccancer.bc.ca
PROVINCIAL SYSTEMIC THERAPY PROGRAM	Ext 2247	gconcon@bccancer.bc.ca
COMMUNITIES ONCOLOGY NETWORK PHARMACIST	Ext 6277	lkovacic@bcancer.bc.ca
DRUG INFORMATION	Ext 6275	druginfo@bccancer.bc.ca
LIBRARY/CANCER INFORMATION	1-(888)-675-8001	requests@bccancer.bc.ca
OSCAR HELP DESK	Ext 8003 1-(888)-355-0355 Fax (604) 708-2051	oscar@bccancer.bc.ca
COMPASSIONATE ACCESS PROGRAM OFFICE (FORMERLY UNDESIGNATED DRUG APPLICATION OFFICE)	Ext 6277 Fax (604) 708-2026	cap_bcca@bccancer.bc.ca
UPDATE EDITOR	Ext 2288	mdelemos@bccancer.bc.ca
CENTRE FOR THE SOUTHERN INTERIOR (CCSI)	(250) 712-3900	Toll-Free 1-(888) 563-7773
FRASER VALLEY CENTRE (FVCC)	(604) 930-2098	Toll-Free 1-(800) 523-2885
VANCOUVER CENTRE (VCC)	(604) 877-6000	Toll-Free 1-(800) 663-3333
VANCOUVER ISLAND CENTRE (VICC)	(250) 519-5500	Toll-Free 1-(800) 670-3322