



Systemic Therapy Update

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Website access at <http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/stupdate.htm>

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[IN TOUCH](#) phone list is provided if additional information is needed.

EDITOR'S CHOICE

PROVINCIAL STANDARDIZATION OF BODY SURFACE AREA CALCULATION

The Provincial Systemic Therapy Program has revised the Chemotherapy Process Policy (III-10) (www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies) with the following changes:

1. The Mosteller formula has been adopted as the provincial standard for all calculations of body surface area (BSA):

$$BSA (m^2) = \sqrt{\frac{Ht (cm) \times Wt (kg)}{3600}}$$

In the case of a difference between the prescribed dose and the protocol dosage calculated by the Mosteller formula, a maximum of a 5% variance continues to be permitted before the physician needs to be contacted to verify the dose.

2. BSA is calculated for the first treatment of each chemotherapy protocol (based on actual body weight unless specified in protocols [e.g., high dose chemotherapy]).
3. Subsequent BSA recalculations are only done if, in the physician's opinion, it is warranted by a change in the clinical status of the patient. The reasons prompting the recalculation must be documented in the Treatment Record of the patient for communication to other cancer care team members.

Until now, there has been inconsistent use of formulae within and between and between cancer centres. This created difficulties when patients moved between centres and regions for their treatments. The adoption of a single formula as the standard can help maintain the consistency of dosage calculations and reduce the potential for dosing error that may occur when complex calculations for multiple formulae are required to verify dosing accuracy.

The most widely used alternative is the DuBois formula. Both the Mosteller and the DuBois formulae have similar precision. A greater than 5% difference in calculated dose between the formulae only occurs in very obese patients (e.g., 160 cm/120 kg). The simplicity of the Mosteller formula however makes it easier to remember and to evaluate on a calculator. For similar reasons, the Alberta Cancer Board has also adopted the Mosteller formula as the provincial standard.

The Mosteller formula can be easily computed with a calculator or using an online calculator (e.g., www.halls.md/body-surface-area/bsa.htm). The Provincial Systemic Therapy Program is in the process of providing an online calculator on the BC Cancer Agency website.

SURVEY FOR READER OF SYSTEMIC THERAPY UPDATE

The first issue of the Systemic Therapy Update was published in June 1998. The goal of this monthly newsletter, as stated in that first issue, is to “...update you on information regarding new policies, professional standards and any areas of mutual interest in patient care that we should all share.” Currently, there are more than 600 subscribers to the Systemic Therapy Update.

We need to know if the ST update is meeting your needs. Please click on the link below which takes you directly to an online survey. It will take you 5 minutes to complete and will us make necessary improvements to the newsletter.

And here is the survey!

<http://www.surveymonkey.com/s.asp?u=380522327729>

MANAGEMENT GUIDELINES FOR BEVACIZUMAB-RELATED SIDE EFFECTS

Bevacizumab (AVASTIN®) is a humanized anti-VEGF monoclonal antibody that, when combined with standard chemotherapy, significantly prolongs survival in patients with metastatic colorectal cancer. This new agent does not increase the incidence of “chemotherapy-related” side effects, such as neutropenia, but it does have its own side effect profile. The Gastrointestinal Tumour Group has recently developed guidelines to help clinicians manage the following side effects in patients with colorectal cancer:

- Hypertension
- Proteinuria
- Bleeding
- Arterial and venous thromboembolism
- Delay in wound healing or wound complications
- Gastrointestinal perforation
- Reversible posterior leukoencephalopathy syndrome

Many of these side effects have implications for the dosing and continuation of bevacizumab-based therapy. Where appropriate, this information has also been incorporated into the relevant bevacizumab-based protocols (UGICIRB, UGICOXB, UGIFFIRB, UGIFFOXB). The full guidelines can be found at:

www.bccancer.bc.ca/HPI/CancerManagementGuidelines/Gastrointestinal/05.Colon/Management/Palliative.htm

CANCER DRUG MANUAL

Chlorambucil Monograph and Patient Handout have been completely revised and updated. Expert review was provided by Dr. Hilary Wass (hematologist) with additional review provided by Dr. Kevin Song (Leukemia/BMT Program of BC) and Dr Joseph Connors (Lymphoma Tumour Group). Changes have been

made to the Side Effects table and the Dosage Guidelines. Some of the new changes include information on rare but potentially serious dermatological toxicities, dosage scheduling and bone marrow depression, and a caution on the increased seizure potential of chlorambucil.

Hydroxyurea Monograph and Patient Handout have been completely revised and updated. Expert review was provided by Dr. Hilary Wass (hematologist). Some of the changes made include a much expanded section on dermatologic toxicity and related precautions for safe handling.

Topotecan information in the Solution Preparation and Compatibility ([Chemotherapy Preparation and Stability Chart](#)) and Parenteral Administration sections has been revised. The acceptable lower concentration limit for the final product has been expanded from 0.02 mg/mL to 0.01 mg/mL based on additional stability data. In practice, this means that most doses of topotecan may be prepared in 50 mL infusion bags, and this will be the new standard within the BC Cancer Agency (see also under **HIGHLIGHTS OF PROTOCOL CHANGES** and **LIST OF NEW AND REVISED PRE-PRINTED ORDERS** in this issue).

DRUG UPDATE

Update on Gefitinib (IRESSA®) Restrictions This is a reminder that no new patients may begin treatment with gefitinib for non-small cell lung cancer (NSCLC). In addition, all patients who are to continue on gefitinib therapy must be registered with the IRESSA® Patient Registry by **31 December 2006** to obtain a continued supply of medication. This is an earlier than the previously communicated date (i.e., 1 February 2007).

These new restrictions follow the notice by Health Canada in June this year on the use of gefitinib as third-line treatment for locally advanced or metastatic NSCLC. Briefly, gefitinib therapy may be continued in patients who are benefiting from it but no new patients should be prescribed gefitinib therapy for NSCLC.

For more information, or to register a patient, call the IRESSA® Patient Registry at 1-866-473-7720. More details are also outlined in the July 2006 issue of the Update.

BENEFIT DRUG LIST

New Class II Indication for Rituximab The following indication has been added to the BC Cancer Agency Benefit List, effective 1 December 2006:

- in combination with CODOX-M or IVAC, in all stages of newly diagnosed Burkitt's lymphoma and Burkitt's leukemia (LYCODOXMR, LYIVACR)

HIGHLIGHTS OF PROTOCOL, PRE-PRINTED ORDER AND PATIENT HANDOUT CHANGES

New Protocols for Burkitt's Lymphoma and Leukemia The Leukemia/Bone Marrow Transplant Tumour Group has introduced two protocols (**LYCODOXMR, LYIVACR**) involving the addition of rituximab to the CODOX-M/IVAC (Magrath) regimen. This regimen is the standard treatment for Burkitt's lymphoma and leukemia (acute lymphoblastic leukemia [ALL-L3]). Both of these malignancies show over-expression of the surface antigen CD-20. In a study from the MD Anderson Centre by Thomas et al. (*Cancer 2006;106:1569-80*), it has been shown that adding rituximab, an anti-CD-20 agent, to standard chemotherapy can improve the response rate and overall survival of these patients. (see also **DRUG BENEFIT LIST** and New Protocols in this issue).

New Adjuvant Protocol for Breast Cancer The Breast Tumour Group has introduced an adjuvant protocol involving the use of a short course of trastuzumab in women with HER-2 positive early breast cancer

(BRAJDTFEC). This protocol can be considered, at oncologist's discretion, for individuals with node negative small tumours, especially if tumour is hormone receptor positive, and/or if there is concern regarding risk-benefit ratio of 1 year of trastuzumab (eg, patients with increased risk for cardiac dysfunction). In the Finnish study by Joensuu et al. (*New Engl J Med* 2006;354:809-20), there was an improvement in recurrence-free survival associated with a 9-week course of trastuzumab added to chemotherapy. Note that trastuzumab is administered before other cardiotoxic therapies (FEC) and concomitantly with docetaxel to limit cardiotoxicity and maintain efficacy.

Bevacizumab-Based Protocols have been revised. Consistent information on precautions, baseline tests, and management of hypertension now appears in all four protocols, as well as in the [BCCA management guidelines for bevacizumab-related side effects](#).

Taxane-Based Pre-Printed Orders All paclitaxel- and docetaxel-based pre-printed orders have been reviewed to ensure consistent wording on the use of non-PVC bags and tubing. Both docetaxel and paclitaxel should be prepared in non-PVC infusion bags and administered using non-PVC tubing. An in-line filter should be used with paclitaxel infusions, but not docetaxel infusions.

Topotecan-Based Protocols have been revised to indicate that topotecan should be prepared in a 50 mL infusion bag (see also under **CANCER DRUG MANUAL** in this issue).

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

The **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” approval are prefixed with the letter U.

New protocols, PPPOs and Patient Handouts (affected documents are checked):

Code	Protocol	PPPO	Patient Handout	Protocol Name
BRAVDOC	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Palliative Therapy for Metastatic Breast Cancer using Docetaxel
BRAJDTFEC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Adjuvant Therapy for Breast Cancer Using Docetaxel and Trastuzumab, and Fluorouracil, Epirubicin and Cyclophosphamide
LYCODOXMR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Treatment of Burkitt's Lymphoma and Leukemia (ALL-L3) with Cyclophosphamide, Vincristine, Doxorubicin, Methotrexate, Leucovorin (CODOX-M) and Rituximab
LYIVACR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Treatment of Burkitt's Lymphoma and Leukemia (ALL-L3) with Ifosfamide, Mesna, Etoposide, Cytarabine (IVAC) and Rituximab

Revised protocols and PPPOs (affected documents are checked):

Code	Protocol	PPPO	Changes	Protocol Name
BRLAACDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Maximum number of cycles revised to 17, infusion time shortened</i>	Treatment of Locally Advanced Breast Cancer using Doxorubicin and Cyclophosphamide followed by Docetaxel and Trastuzumab
UGICIRB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Monitoring for blood pressure, baseline albumin, proteinuria, antihypertensives, and eligibility clarified</i>	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Irinotecan, Bevacizumab and Capecitabine
UGICOXB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Monitoring for blood pressure, baseline albumin, proteinuria, and antihypertensives clarified</i>	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Oxaliplatin, Bevacizumab and Capecitabine
UGIFFIRB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Monitoring for blood pressure, baseline albumin, proteinuria, antihypertensives, and eligibility clarified</i>	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Irinotecan, Fluorouracil, Folinic Acid (Leucovorin) and Bevacizumab

Code	Protocol	PPPO	Changes	Protocol Name
UGIFFOXB	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Monitoring for blood pressure, baseline albumin, proteinuria, and antihypertensives clarified</i>	Palliative Combination Chemotherapy for Metastatic Colorectal Cancer Using Oxaliplatin, 5-Fluorouracil, Folinic Acid (Leucovorin) and Bevacizumab
GOOVTA3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	Treatment of Progressive, Platinum-Refractory Epithelial Ovarian Carcinoma, Primary Peritoneal Carcinoma or Fallopian Tube Carcinoma Using Paclitaxel
GOOVTOP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>BC Cancer Agency Preparation standard (infusion bag size) changed</i>	Treatment of Relapsed/Progressive Epithelial Ovarian, Fallopian Tube or Primary Peritoneal Cancer Using Topotecan
GOTDLR	<input checked="" type="checkbox"/>	N/A	<i>Post-hydration duration clarified</i>	Therapy for Low Risk Gestational Trophoblastic Cancer Using Dactinomycin and Methotrexate
GOTDHR	<input checked="" type="checkbox"/>	N/A	<i>Footnote on dose modification clarified</i>	Therapy for High Risk Gestational Trophoblastic Cancer (based on GO9103 "MACE" protocol)
GUEMCYT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Typo in benefit class corrected</i>	Androgen-Independent Prostate Cancer Using Estramustine Phosphate
GUPDOC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	Palliative Therapy for Metastatic Hormone Refractory Prostate Cancer Using Docetaxel
UGUTAXGEM	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	Palliative Therapy For Germ Cell Cancers Using Paclitaxel And Gemcitabine
LUCISDOC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	First-Line Treatment for Advanced Non-Small Cell Lung Cancer (NSCLC) with Cisplatin and Docetaxel
LUDOC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	Second-Line Treatment of Advanced Non-Small Cell Lung Cancer (NSCLC) with Docetaxel
LUAJCAT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	Adjuvant Carboplatin and Paclitaxel Following Resection of Non-Small Cell Lung Cancer
LUAVCAT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Requirement for non-PVC equipment clarified</i>	First Line Treatment of Advanced Non-Small Cell Lung Cancer (NSCLC) with Carboplatin and Paclitaxel
LUAVTOP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>BC Cancer Agency Preparation standard (infusion bag size) changed</i>	Second Line Treatment of Recurrent Small Cell Lung Cancer (SCLC) with Topotecan
SCPAINLI	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>dosing revised, extravasation hazard deleted</i>	Extreme Pain Therapy Using Parenteral Lidocaine
SCPAINSU	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>eligibility and dosing revised</i>	Incident Pain Therapy Using Sufentanil Via Sublingual Route

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

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