BC Cancer Agency

Systemic Therapy Update

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

INSIDE THIS ISSUE

EDITOR'S CHOICE

GUIDELINES FOR THE USE OF BEVACIZUMAB (AVASTIN®) IN METASTATIC COLORECTAL CANCER

Bevacizumab is currently available through the BC Cancer Agency Compassionate Access Program for first-line therapy for metastatic colorectal cancer in patients fit enough for doublet chemotherapy and who do not have contraindications to bevacizumab therapy. Recent or planned major surgery within 6-8 weeks, uncontrolled hypertension, significant proteinuria, active bleeding and a history of arterial thrombotic event at an age greater than 65 are settings where the evidence would indicate that bevacizumab is associated with exaggerated risk of harm and should therefore be deferred.

Continuing use of bevacizumab is currently being evaluated by the BC Cancer Agency Priorities and Evaluations Committee. The evidence for use in metastatic colorectal cancer will be reviewed including phase III data of bevacizumab in the first-line setting with irinotecan and fluorouracil/leucovorin (IFL regimen) (*Hurwitz H et al, NEJM 2004*) with FOLFOX or XELOX (*Cassidy J et al, NO16966, ESMO 2006*) and as second-line treatment with FOLFOX (*Giantonio BJ et al, E3200, GI ASCO 2005*).

In the interest of cost-effectiveness as well as evidence supporting the use of bevacizumab with either oxaliplatin and irinotecan therapy, oncologists are currently asked to strongly consider administering bevacizumab with FOLFIRI rather than FOLFOX therapy in first-line setting. Bevacizumab therapy will continue to be limited to 6 months while continuation of chemotherapy may be considered via the BC Cancer Agency Compassionate Access Program.

The combination of FOLFIRI and bevacizumab has been proposed to the Priorities and Evaluations Committee and, if approved, may well become the exclusive bevacizumab containing regimen for first-line metastatic colorectal cancer in BC. Patients should also be offered clinical trials, whenever available.

The BC Cancer Agency Gastrointestinal Tumour Systemic Group is committed to ongoing use of bevacizumab for metastatic colorectal cancer in BC and collaboration and judicious use of this program will contribute to its continued availability.

Hagen Kennecke, MD, FRCPC
Medical Oncology
Chair, Provincial Gastrointestinal Tumour Systemic Group
BC Cancer Agency

COMMUNITIES ONCOLOGY NETWORK (CON) CONTACT INFORMATION ON WEBSITE

The contact information for various CON hospitals has been incorporated into an interactive structure on the BC Cancer Agency website. Please follow this link to view the revised webpages:

www.bccancer.bc.ca/RS/CommunitiesOncologyNetwork/cservices/default.htm

This structure allows the user to click on a Health Authority from a British Columbia map. Each Health Authority clearly identifies the various towns/cities that which provide oncology services, and these are hyperlinked to pages with corresponding contact information and **'level of service' available for each location**. The 'level of service' for each location has also been implemented. At the moment, the information provided relates to Systemic Therapy services available in each of the communities. Over time, we hope to incorporate other oncology services available in the communities such as psychosocial oncology.

Historically, the contact information for various hospitals in the Communities Oncology Network were categorized based on its funding designation of the hospital (i.e., Community Cancer Centre, Community Cancer Service or Community Hospital). Both internal and external audiences found it very difficult to navigate through this structure and some 72 web pages. Much of the information was also out-of-date.

If there is additional information you would like to see included in this revised structure or have an update to the contact information listed, do send an email to Gigi Concon at gconcon@bccancer.bc.ca. We appreciate your ongoing support to keep the contact information in this site current.

HIGHLIGHTS OF CHANGES IN PROTOCOLS AND PRE-PRINTED ORDERS

The ***Gynecological Tumour Group*** has revised *carboplatin dosing schedule* for several protocols and pre-printed orders (*GOCXCAT, GOENDCAT, GOOVCATM, GOOVCATR, GOOVCATX*). The revised schedule allows for the shortening of the 4-weekly interval to 3-weekly (every 21 days) after cycle 2 (i.e., starting with cycle 3), provided that hematologic recovery meets or exceeds values needed for retreatment at full doses. This change would mean shorter cycle length for patients who have tolerated the initial two cycles of treatment.

Four-weekly dosing was used in early studies, such as the pivotal NCIC trial (*Swenerton et al. J Clin Oncol 1992;10:718-26*) because platelet count nadirs could be delayed up to 21 days after treatment. However, more recent phase III studies - including some GOG trials - have found acceptable toxicity associated with the 3-weekly dosing.

The ***Leukemia and Sarcoma Tumour Groups*** have revised their *imatinib* protocols (*LKCMLI, SAAVGI*) to include a precaution regarding potential congestive heart failure (CHF). A recent report (*Kerkelä et al. Nat Med 2006;12: 908-16*) described 10 patients treated with imatinib who developed significantly reduced left ventricular ejection fraction and CHF. Eight of the 10 patients were on imatinib for chronic myelogenous leukemia, with the remaining two patients being treated for acute lymphoblastic leukemia and myelofibrosis.

The average daily dose was around 620 mg and the adverse events occurred after about seven months of treatment.

The ***Lymphoma Tumour Group*** has revised a number of protocols, including:

- precaution on hepatitis B reactivation and medical consult required (see under Cancer Management Guidelines in this issue)
- monitoring and tests in ULYRICE, LYRITB and LYRITZ protocols

The ***Genitourinary Tumour Group*** has revised the *GUBEP* protocol to include its use for seminoma. In addition, the tumour group has changed the name of the contact physician in a number of the protocols.

CANCER MANAGEMENT GUIDELINES

The ***Lymphoma Tumour Group*** has revised the section on treatment of lymphoma in patients with past hepatitis B infection (www.bccancer.bc.ca/HPI/CancerManagementGuidelines/Lymphoma/HD/13PatientsWithPastHepatitisB.htm). Consultation with a hepatologist has been changed to an appropriate specialist with experience managing hepatitis, since the former is not available in all locations.

CANCER DRUG MANUAL

Fludarabine Monograph and Patient Handouts have been completely revised. Expert review was provided by Dr. Adrian Yee (Lymphoma Tumour Group). Some of the highlights of the revision:

- Information on the oral formulation is now included in the monograph.
- Renal failure dosing has been added to the Dosage Guidelines section.
- Changes to the Side Effects section include expanded information on opportunistic infections, autoimmune hemolytic anemia, and pulmonary toxicities.
- The patient handouts now include management details for several potential side effects including diarrhea, loss of appetite, neuropathy, muscle and joint pain, and headache.

Alemtuzumab Patient Handouts for IV and SC use have been more clearly differentiated.

Bevacizumab Monograph has been revised due to the publication of Management guidelines for bevacizumab-related side effects in patients with colorectal cancer by the Gastrointestinal Tumour Group. The Side Effects section has been shortened, and readers are referred to the more detailed guidelines.

Imatinib Monograph has been revised to include a caution on potential cardiac toxicity. See more details in this issue's **Highlights of Changes in Protocols and Pre-Printed Orders**.

Leucovorin Patient Handouts for IV and PO use have been more clearly differentiated.

Rituximab Monograph has been revised to include a caution on gastrointestinal obstruction and perforation. These have occurred very rarely (0.006%), but have been fatal in some cases. Information on hepatitis B reactivation has been revised to match the Lymphoma Tumour Group's latest recommendations. See more details in this issue's **Highlights of Changes in Protocols and Pre-Printed Orders** and **Cancer Management Guidelines**.

Chemotherapy Preparation and Stability Chart has been revised:

- to highlight that the final product stability for the following drugs includes the administration time:
    - busulfan, docetaxel, mechlorethamine, teniposide (at high concentration 1mg/mL)
- to clarify any known overfill of vials

NURSING RESOURCES OF THE MONTH

Clinical Breakthroughs in EGFR Inhibition: Applying the Science to Your Clinical Practice. This webcast discusses the implications of down-regulating HER1/EGFR, summarizes the therapeutic strategies for targeting HER1/EGFR, identifies strategies to prepare for administration of HER1/EGFR inhibitors, and summarizes best practices for managing symptoms related to HER1/EGFR inhibitors.

http://app2.capitalreach.com/esp1204/servlet/tc?c=10170&cn=ons&e=5856&s=20326&&spl=5

Submitted by:
Judy Oliver, BScN, MEd
Education Resource Nurse
BC Cancer Agency

FOCUS ON: UNDERSTANDING TARGETED THERAPIES

A new class of anti-cancer drugs called targeted therapies has recently been introduced as a result of the human genome mapping and a better understanding of malignant transformation of normal cells.[1] Targeted therapy aims to be more selective than traditional cytotoxic agents[2],[3] by acting on pathways unique to cancer cells, particularly at the molecular level. Hence, they are also sometimes known as molecularly-targeted therapies.[4] Because of this selectivity for cancer cells, targeted therapies may have fewer side effects than traditional chemotherapy. There are two major ways to develop targeted therapies.[3]

1. Pharmacokinetic targeting involves drug delivery systems that preferentially supply cytotoxic drug to cancer cells and minimize exposure to healthy tissue. For example capecitabine is a pro-drug that requires a 3-step enzymatic activation to form the cytotoxic drug fluorouracil. The final step is activated by thymidine phosphorylase, which is present in higher concentrations in some solid tumours than in healthy tissue. This leads to higher fluorouracil concentrations in tumuor cells following capecitabine administration.[3]
2. Pharmacodynamic targeting involves drugs which selectively target differences that are unique to cancer cells. The National Cancer Institute classifies agents with pharmacodynamic targeting into the following[4]:

- Small molecule drugs
- Monoclonal antibodies
- Apoptosis-inducing drugs
- Angiogenesis Inhibitors
- Cancer vaccines
- Gene therapy

The focus of this article will be on these types of agents.

Small Molecule Drugs

Also known as tyrosine kinase (TK) inhibitors, these agents block the activation of transmembrane TK receptors by growth factors, thus preventing transduction of signals that can lead to excess cell proliferation.[5] The low molecular weights of these agents allows for many of them to be given orally.[6] Cancer cells often have mutated or overexpressed TK receptors. Some of the TK receptors involved in cancer development are:

- BCR-ABL
- epidermal growth factor (EGF)
- platelet-derived growth factor (PDGF)
- mammalian target of rapamycin (mTOR)
- vascular endothelial growth factor (VEGF)

EGF receptor (EGFR) can be further divided into HER1 (commonly referred to as EGFR), HER2, HER3, and HER4 subtypes. Overexpression of EGFR and VEGF have been associated with poorer prognosis in some malignancies.[1] BCR-ABL, a mutated TK present in chronic myelogenous leukemia, is constantly active and leads to excess cell proliferation.[6, 7]

Monoclonal Antibodies
These are usually genetically engineered antibodies that target antigens which are unique or overexpressed in cancer cells.[2, 7] Several of these antigens are the same TK receptors targeted by small molecule drugs.[8] Antibodies can cause cancer cell death in one or more of the following ways[7, 9]:

- Blocking the transduction of signals by growth factors that can lead to excess cell proliferation
- Antibody-dependent, cell-mediated cytotoxicity
- Delivery of cytotoxins or radioisotopes to cancer cells by conjugating them to the antibody

Apoptosis-Inducing Drugs
Normal ageing cells undergo apoptosis to remove excess, damaged and abnormal cells. Apoptosis is often blocked in cancer cells, leading to excess overall cell population. Two methods to restore apoptosis are:[4]

- Proteasome Inhibitors block the action of proteasomes which catalyze proteins involved in regulating the cellular metabolic functions.
- Antisense oligonucleotides are synthetic strands of DNA or RNA that bind to genes to prevent their expression and hence synthesis of the coded protein.[7]

Angiogenesis Inhibitors
These are designed to interrupt the development of a blood supply (angiogenesis) by the tumour, which helps it grow and metastasize. Angiogenesis may result from growth factors secreted by tumours, the most important of which is the VEGF; other growth factors include EGF, basic fibroblastic growth factor (bFGF) and PDGF.[2]

Cancer Vaccines
These agents target antigens unique or overexpressed in cancer cells.[10, 11] They are made by harvesting cancer cells from a patient (autologous) or a line of cancer cells (allogeneic). They are then genetically engineered to make them more recognizable to the immune system. The cells are then killed and made into a vaccine.[12]

Gene Therapy
This is a general term for treatments that use genetic material to modify cells, such as immunotherapy (previously covered under Cancer Vaccines), oncolytic virotherapy or gene transfer.[12] Oncolytic virotherapy involves genetically engineering viruses to target and kill cancer cells. Gene transfer is the process of introducing a foreign gene into a cancer cell or surrounding tissue. Viral vectors are used to deliver the gene to the cancer cells. The technology for oncolytic virotherapy and gene transfer therapies is still under development.

China became the first country to approve a gene therapy when it approved GENDICINE® for head and neck cancer in 2003.[12] GENDICINE® works by transferring the p53 tumor-suppressor gene to cancer cells. Tumor suppressor genes normally keep cell replication under control. They can be absent or mutated in cancer cells resulting in excess proliferation.

DRUG NAME	***MECHANISMS***	***CURRENT USES IN BC (FORMULARY STATUS)***
Small molecule drugs *[9, 13-16]*		
Tretinoin (all-trans retinoic acid) (VESANOID®)	Inhibition of PML-RAR-α	Acute promyelocytic leukemia (Class I)
Erlotinib (TARCEVA®)	Inhibition of EGFR	Non-small cell lung cancer (CAP approval)
Gefitinib (IRESSA®)	Inhibition of EGFR	Non-small cell lung cancer (CAP approval – no new patient)
Imatinib (GLEEVEC®)	Inhibition of BCR/ABL for CML c-kit for GIST	CML, GIST (class II)
Monoclonal antibodies*[6, 7, 9, 13, 16-19]*		
Alemtuzumab (CAMPATH®)	Cell mediated cytotoxicity via CD52	Chronic lymphocytic leukemia and prolymphocytic leukemia (CAP approval)

DRUG NAME	MECHANISMS	CURRENT USES IN BC (FORMULARY STATUS)
Bevacizumab (AVASTIN®)	Signal transduction blockade via VEGF	Colorectal cancer (CAP approval)
Cetuximab (ERBITUX®)	Signal transduction blockade via EGFR	Colorectal cancer (CAP approval)*
Ibritumomab (ZEVALIN®)	CD20 Conjugation with radioisotope	Non-Hodgkin's lymphoma (Class II)
Rituximab (RITUXAN®)	Cell mediated cytotoxicity via CD20	Various lymphomas (Class II)
Tositumomab (BEXXAR®)	CD20 Conjugation with radioisotope	Non-Hodgkin's lymphoma (Class II)
Trastuzumab (HERCEPTIN®)	Signal transduction blockade and cell mediated cytotoxicity via HER2	Breast cancer overexpressing HER-2 (Class II)
Apoptosis-inducing drug*[4, 16]*		
Bortezomib (VELCADE®)	proteasome inhibitor	Multiple myeloma (CAP approval)
Angiogenesis inhibitor*[10, 13, 16, 20-22]*		
Sorafenib (NEXAVAR®)	Inhibition of VEGF, PDGF	Renal cell cancer (CAP approval)*
Sunitinib (SUTENT®)	Inhibition of VEGF, PDGF	Renal cell cancer (CAP approval)*
Thalidomide (THALOMID®)	unknown	Multiple myeloma (no longer BCCA benefit as of 1 Jul 2006*)
Vaccine		
Human papillomavirus vaccine (GARDASIL®)[23]	HPV 6, 11, 16 & 18	Prevention of cervical cancer (non-BCCA benefit)
Gene Therapy*[12]*		
GENDICINE®	Delivery of p53 tumour-suppressor gene	Head and Neck cancer (non-BCCA benefit, not available in Canada)

CAP = BC Cancer Agency Compassionate Access Program
CML = chronic myelogenous leukemia, GIST = gastrointestinal stromal tumors
*See "Drugs with Special Ordering Procedures" on BCCA website for more details (www.bccancer.bc.ca/HPI/ChemotherapyProtocols/sapchart.htm)

Submitted by:
Rhonda Kalyn, BSP

Pharmacy CON Educator
Centre for the Southern Interior – BC Cancer Agency

Reviewed:
Mário de Lemos, PharmD, MSc (Oncol)

Provincial Drug Information Coordinator
BC Cancer Agency

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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**.

Revised protocols, PPPOs and patient handouts (affected documents are checked):

Code	Protocol	PPPO	Patient Handout	Changes	Protocol Title
BRAJDTFEC	☐	☐	☑	*Side effects added for dexamethasone*	Adjuvant Therapy for Breast Cancer using Docetaxel and Trastuzumab, and Fluorouracil, Epirubicin and Cyclophosphamide
BRLAACDT	☐	☐	☑	*Side effects added for dexamethasone*	Treatment of Locally Advanced Breast Cancer using Doxorubicin and Cyclophosphamide followed by Docetaxel (TAXOTERE®) and Trastuzumab
GOCXCAT	☑	☑	☐	*Dosing interval revised*	Primary Treatment of Advanced/Recurrent Non-Small Cell Cancer of the Cervix with Carboplatin and Paclitaxel in Ambulatory Care Settings
GOCXRADC	☐	☑	☐	*Premedication schedule clarified*	Treatment of High Risk Squamous Cell Carcinoma of Cervix with Concurrent Cisplatin and Radiation
GOENDCAT	☑	☑	☐	*Dosing interval revised*	Treatment of Primarily Advanced or Recurrent Endometrial Cancer using Carboplatin and Paclitaxel

Code	Protocol	PPPO	Patient Handout	Changes	Protocol Title
GOEP	☐	☑	☐	*Route of administration clarified for dexamethasone*	Therapy of Dysgerminomatous Ovarian Germ Cell Cancer Using Cisplatin and Etoposide
GOOVCATM	☑	☑	☐	*Dosing interval revised*	Primary Treatment of Invasive Epithelial Ovarian, Fallopian Tube and Primary Peritoneal Cancer, with No Visible Residual Tumour (Moderate-High Risk) using Carboplatin and Paclitaxel
GOOVCATR	☑	☑	☐	*Dosing interval revised*	Second Line Treatment using Paclitaxel and Carboplatin for Epithelial Ovarian Cancer Relapsing after Primary Treatment
GOOVCATX	☑	☑	☐	*Dosing interval revised*	Primary Treatment of Visible Residual (Extreme Risk) Invasive Epithelial Ovarian Cancer in Ambulatory Care Settings using Paclitaxel and Carboplatin
UGUAJPG	☑	☐	☐	*Contact physician revised*	Adjuvant Therapy for Urothelial Carcinoma using Cisplatin and Gemcitabine.
GUBCG	☑	☐	☐	*Contact physician revised*	Therapy for High Risk Superficial Transitional Cell Bladder Cancer using BCG.
GUBCV	☑	☐	☐	*Contact physician revised*	Therapy for Transitional Cell Cancers using Carboplatin-Vinblastine.
GUBEP	☑	☐	☐	*Title, eligibility and exclusion revised to include use in seminoma, contact physician revised*	Treatment with Bleomycin, Etoposide, Cisplatin for Germ Cell Cancers
GUBP	☑	☐	☐	*Contact physician revised*	Therapy for Locally Advanced Bladder Cancer using Concurrent Cisplatin + XRT
GUBPW	☑	☐	☐	*Contact physician revised*	Treatment of Locally Advanced Bladder Cancer with Weekly Cisplatin and Concurrent Radiation.
GUEP	☑	☐	☐	*Contact physician revised*	Therapy for Nonseminoma Germ Cell Cancer using Etoposide-Cisplatin.
GUKIFN	☑	☐	☐	*Contact physician revised*	Therapy for Advanced Renal Cell Carcinoma using Alpha-Interferon (a-IFN).
GUPDOC	☐	☑	☐	*Number of tablets per cycle clarified for prednisone*	Palliative Therapy for Metastatic Hormone Refractory Prostate Cancer Using Docetaxel
GUPKETO	☑	☐	☐	*Contact physician revised*	Short Term Hormonal Management for Metastatic Prostate Cancer using High Dose Ketoconazole Therapy.
GUPMX	☑	☐	☐	*Contact physician revised*	Palliative Therapy for Hormone-Refractory Prostate Cancer using Mitoxantrone and Prednisone.

Code	Protocol	PPPO	Patient Handout	Changes	Protocol Title
GUSCARB	☑	☐	☐	*Contact physician revised*	Adjuvant Therapy for Stage I High Risk Seminoma using Carboplatin.
GUSCCAVE	☑	☐	☐	*Contact physician revised*	Chemotherapy/Radiotherapy For Localized Small Cell Carcinoma Urinary Site (using Cisplatin, Doxorubicin, Vincristine, Etoposide)
GUVEIP	☑	☐	☐	*Contact physician revised*	Consolidation/Salvage Treatment for Germ Cell Cancer Using Vinblastine, Cisplatin, Ifosfamide and Mesna.
LKCMLI	☑	☐	☐	*Precaution of cardiac toxicity added*	Treatment of Chronic Myeloid Leukemia Using Imatinib (GLEEVEC®)
LUNAVP	☑	☑	☐	*Administration sequence clarified*	Treatment for Advanced Non-Small Cell Lung Cancer (NSCLC) with Cisplatin and Vinorelbine
ULUAVERL	☑	☐	☐	*Dosing frequency clarified*	Treatment of Advanced Non-small Cell Lung Cancer (NSCLC) with Erlotinib
ULUGEF	☑	☐	☐	*Dosing frequency clarified*	Third-Line Treatment for Advanced Non-Small Cell Lung Cancer (NSCLC) with Gefitinib
LYABVD	☑	☐	☐	*Duration of ABVD therapy and hepatitis B reactivation consult revised*	Treatment of Hodgkin's Disease with Doxorubicin, Bleomycin, Vinblastine and Dacarbazine
ULYALEM	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Fludarabine-Refractory B-Chronic Lymphocytic Leukemia (B-CLL) and T-Prolymphocytic Leukemia (T-PLL) with Alemtuzumab
LYCDA	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Hairy Cell Leukemia with Cladribine
LYCHLOR	☑	☐	☐	*Hepatitis B reactivation consult revised*	Therapy for Low Grade Lymphoma and Chronic Lymphocytic Leukemia Using Chlorambucil
LYCHOP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Lymphoma with Doxorubicin, Cyclophosphamide, Vincristine and Prednisone
LYCHOPR	☑	☐	☐	*Hepatitis B reactivation consult revised and Precaution on gastrointestinal obstruction or perforation added*	Treatment of Lymphoma with Doxorubicin, Cyclophosphamide, Vincristine, Prednisone and Rituximab (CHOP-R)
LYCODOXMR	☑	☐	☐	*Hepatitis B reactivation consult revised and Precaution on gastrointestinal obstruction or perforation added*	Treatment of Burkitt Lymphoma and Leukemia (ALL-L3) with Cyclophosphamide, Vincristine, Doxorubicin, Methotrexate, Leucovorin (CODOX-M) and Rituximab

Code	Protocol	PPPO	Patient Handout	Changes	Protocol Title
LYCSPA	☑	☐	☐	*Hepatitis B reactivation consult revised*	Cyclosporine for cytopenias associated with lymphoproliferative disorder of large granular lymphocytes
LYCVP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Advanced Indolent Lymphoma using Cyclophosphamide, Vincristine and Prednisone
LYCVPPABO	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Hodgkin's Disease with Cyclophosphamide, Vinblastine, Procarbazine And Prednisone
LYCVPR	☑	☐	☐	*Cyclophosphamide preparation revised, hepatitis B reactivation consult revised and Precaution on gastrointestinal obstruction or perforation added*	Treatment of Advanced Indolent Lymphoma using Cyclophosphamide, Vincristine, Prednisone and Rituximab (CVP-R)
LYCYCLO	☑	☐	☐	*Hepatitis B reactivation consult revised*	Therapy of Lymphoma, Hodgkin's Disease, Chronic Lymphocytic Leukemia or Multiple Myeloma Using Cyclophosphamide
LYECV	☑	☐	☐	*Hepatitis B reactivation consult revised*	Consolidation for Lymphoma Using Etoposide and Cyclophosphamide
LYFLU	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Low-Grade Lymphoma or Chronic Lymphocytic Leukemia with Fludarabine
LYGDP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Lymphoma with Gemcitabine, Dexamethasone and Cisplatin (GDP)
LYHDMTXP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Primary Intracerebral Lymphoma with High Dose Methotrexate
LYHDMTXR	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Leptomeningeal Lymphoma or Recurrent Intracerebral Lymphoma with High Dose Methotrexate
LYIT	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Lymphoma using Intrathecal Methotrexate and Cytarabine
ULYMFBEX	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment for refractory cutaneous T-cell lymphoma using Bexarotene (Note: approval from the Health Canada Special Access Programme required)
ULYMFECP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Cutaneous T-cell Lymphoma (Sézary syndrome) with Extracorporeal Photopheresis
LYPALL	☑	☐	☐	*Hepatitis B reactivation consult revised*	Lymphoma Palliative Chemotherapy

Code	Protocol	PPPO	Patient Handout	Changes	Protocol Title
ULYRICE	☑	☑	☐	*Hepatitis B reactivation consult revised, urine tests for hematuria and precaution regarding gastrointestinal obstruction or perforation added*	Treatment of Advanced Stage Large B-Cell Non-Hodgkin's Lymphoma with Ifosfamide, Carboplatin, Etoposide and Rituximab
LYRITB	☑	☐	☐	*Hepatitis B reactivation consult revised*	Summary for Palliative Therapy For Lymphoma Using Radioimmunotherapy: Tositumomab-Priming for I^{131} Tositumomab
LYRITUX	☑	☑	☐	*Vital signs monitoring and hepatitis B reactivation consult revised, precaution regarding gastrointestinal obstruction or perforation added*	Treatment of Lymphoma with Single Agent Rituximab
LYRITZ	☑	☑	☐	*Hepatitis B reactivation consult revised, post day 8 labs added*	Palliative Therapy For Lymphoma Using Radioimmunotherapy: Rituximab-Priming for Ibritumomab ^{90}Y
ULYRMTN	☑	☑	☐	*Hepatitis B reactivation consult revised, vital signs monitoring clarified*	Maintenance Rituximab for Indolent Lymphoma
LYSNCC	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Burkitt lymphoma with Cyclophosphamide and Methotrexate (Leucovorin)
UMYBORTEZ	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Multiple Myeloma with Bortezomib
MYMP	☑	☐	☐	*Hepatitis B reactivation consult revised*	Treatment of Multiple Myeloma Using Melphalan and Prednisone
UMYTHALID	☑	☐	☐	*Hepatitis B reactivation consult revised*	Therapy of Multiple Myeloma Using Thalidomide
SAAVGI	☑	☐	☐	*Contra-indication in eligibility clarified, precaution of cardiac toxicity added, new reference added*	Treatment of Advanced C-Kit Positive Gastrointestinal Stromal Cell Tumours (GIST's) Using Imatinib (GLEEVEC®)

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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