BC CANCER
Provincial Health Services Authority

Systemic Therapy Update

Volume 23 Issue 1
January 2020

For Health Professionals Who Care for Cancer Patients

Inside This Issue:

Editor's Choice

New Programs

Effective 01 January 2020, the BC Cancer Provincial Systemic Therapy Program has approved the following new treatment programs. The full details of these programs can be found on the BC Cancer website in the Chemotherapy Protocols section.

Genitourinary

Cabozantinib for Metastatic Renal Cell Carcinoma (UGUCABO) — The BC Cancer Genitourinary Tumour Group is introducing cabozantinib, an oral tyrosine kinase inhibitor (TKI), for patients with metastatic renal cell carcinoma (RCC). Patients are eligible for cabozantinib after failure of first-line TKI therapy with sunitinib, sorafenib or pazopanib, or after first-line immunotherapy followed by the use of these TKIs in the second-line setting. Patients are eligible to receive one of cabozantinib, axitinib or everolimus, but not the sequential use of these agents. A BC Cancer Compassionate Access Program (CAP) approval is required.

Approval of this new treatment program is based on the randomized, open-label, phase III METEOR trial in patients with metastatic RCC previously treated with at least one TKI.[1] Cabozantinib was associated with a significantly longer median progression-free survival (mPFS 7.4 mo vs. 3.8 mo, HR 0.58, 95% CI 0.45-0.75) and median overall survival (mOS 21.4 mo vs. 16.5 mo, HR 0.66, 95% CI 0.53-0.83) compared

with everolimus. The incidence of grade 3 or 4 adverse events was higher with cabozantinib (71% vs. 60%), as was the incidence of dose reductions (63% vs. 25%). Toxicities with cabozantinib were consistent with typical TKI toxicities and considered manageable; the most common grade 3 or higher events were hypertension (15% vs. 4%) and diarrhea (13% vs. 2%).[1,2]

Lung

First-Line Osimertinib in the Treatment of Epidermal Growth Factor Receptor (EGFR) Mutation-Positive Advanced Non-Small Cell Lung Cancer (ULUAVOSIF) — The BC Cancer Lung Tumour Group is implementing osimertinib, a third-generation EGFR-TKI, for the first-line treatment of patients with EGFR-sensitizing mutations (exon 19 del or L858R). Osimertinib provides a treatment alternative to standard first- and second-generation EGFR-TKIs (e.g., afatinib and gefitinib). Because osimertinib is selective for both EGFR-sensitizing and acquired T790M resistance mutations, its use in the first-line setting precludes the use of the other, less selective EGFR-TKIs for any subsequent line of therapy.[3] Osimertinib remains available for patients who have progressed on standard EGFR-TKIs after acquiring the EGFR T790M resistance mutation (ULUAVOSI). A BC Cancer Compassionate Access Program (CAP) approval is required.

Approval of this new treatment program is based on the randomized, double-blind, phase III FLAURA trial in patients with previously untreated, EGFR mutation-positive advanced non-small cell lung cancer (NSCLC).[4] Osimertinib was associated with a significantly longer median progression-free survival compared to standard EGFR-TKIs (mPFS 18.9 mo vs. 10.2 mo, HR 0.46, 95% CI 0.37-0.57). Fewer patients treated with osimertinib experienced rash or acne (58% vs. 78%), or grade 3 or 4 adverse events (34% vs. 45%). Changes in QT interval were reported in a higher percentage of patients on osimertinib (10% vs. 5%), although no fatal cases of torsades des pointes were reported in either treatment group.

Lymphoma

Venetoclax and Rituximab for Relapsed/Refractory Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma (ULYVENETOR) — The BC Cancer Lymphoma Tumour Group is introducing venetoclax in combination with rituximab (VR) for patients with or without chromosome 17p deletion. Eligible patients must either have disease that progressed on or been intolerant to prior B-cell receptor pathway inhibitors (i.e., ibrutinib, idelalisib).[5] This treatment program follows the September 2019 implementation of venetoclax monotherapy in this patient population (ULYVENETO). A BC Cancer Compassionate Access Program (CAP) approval is required.

Approval of this new treatment program is based on the randomized, controlled phase III MURANO trial which compared VR with bendamustine plus rituximab.[6] The median progression free survival was significantly higher with VR (mPFS 7.4 mo vs. 3.9 mo, HR 0.51, 95% CI 0.41-0.62). Notable grade 3 or 4 adverse events included neutropenia (57.7% vs. 38.8%) and tumour lysis syndrome (TLS) (2.1% vs. 0.5%). To reduce the risk of TLS, venetoclax is titrated in a 5-week ramp-up schedule to the recommended maintenance dose of 400 mg per day. Once the ramp-up phase is complete, rituximab is added for 6 cycles. The venetoclax maintenance dose is continued until disease progression or toxicity to a maximum of 2 years. For more information on venetoclax dosing and monitoring, as well as an overview of TLS, please see the Editor's Choice and Education Corner in the September 2019 issue of the Systemic Therapy Update.

References

1. Choueiri T, Escudier B, Powles T, et al. Cabozantinib versus everolimus in the advanced renal cell carcinoma (METEOR): final results from a

Editor's Choice

randomized, open-label, phase 3 trial. Lancet Oncol 2016;17:917-927. Available from: https://dx.doi.org/10.1016/S1470-2045(16)30107-3
2. Pan-Canadian Oncology Drug Review (pCODR) Expert Review Committee (pERC). Final recommendation for cabozantinib (Cabometyx®) for renal cell carcinoma. 20 Feb 2019.
3. Pan-Canadian Oncology Drug Review (pCODR) Expert Review Committee (pERC). Final recommendation for osimertinib (Tagrisso®) for advanced or metastatic non-small cell lung cancer. 04 Jan 2019.
4. Soria J-C, Ohe Y, Vansteenkiste J, et al. Osimertinib in untreated EGFR-mutated advanced non-small cell lung cancer. N Engl J Med 2018;378:113-125. doi: 10.1056/NEJMoa1713137
5. Pan-Canadian Oncology Drug Review (pCODR) Expert Review Committee (pERC). Final recommendation for venetoclax (Venclexta®) in combination with rituximab for chronic lymphocytic leukemia. 31 May 2019.
6. Seymour JF, Kipps TJ, Eichhorst B, et al. Venetoclax-rituximab in relapsed or refractory chronic lymphocytic leukemia. N Engl J Med 2018;378:1107-1120. doi: 10.1056/NEJMoa1713976

Drug Update

PharmaCare Coverage for Netupitant/Palonosetron

Effective 26 November 2019, **netupitant/palonosetron** was listed as a PharmaCare Limited Coverage benefit for the prevention of acute and delayed chemotherapy-induced nausea and vomiting (CINV). Netupitant/palonosetron is a combination NK_1/5-HT_3 receptor antagonist used with dexamethasone for the prevention of CINV with highly-emetogenic chemotherapy (HEC). This combination is an alternative to the use of aprepitant (NK_1 receptor antagonist), ondansetron (5-HT_3 receptor antagonist) and dexamethasone.

The **PharmaCare Collaborative Prescribing Agreement (CPA)** for aprepitant has been replaced by a CPA for netupitant/palonosetron. Current aprepitant CPAs will remain active for exempted prescribers until 01 February 2020 with Special Authority (SA) coverage continuing for applicable patients until 01 August 2020. Effective immediately, physicians are required to sign a new CPA to receive an exemption from completing PharmaCare SA forms for netupitant/palonosetron.

Updates to affected BC Cancer treatment protocols, pre-printed orders (PPPOs) and/or handouts, as well as revisions to the BC Cancer supportive care protocol for CINV (SCNAUSEA), will be implemented as of 01 February 2020. These will be announced in the February 2020 issue of the Systemic Therapy Update.

PharmaCare resources for netupitant/palonosetron include:

- Special Authority
- Collaborative Prescribing Agreement – link in Practitioner Exemptions section
- BC PharmaCare Newsletter – November 26, 2019 issue, page 4

Daratumumab Rapid Infusion

A 90-minute **daratumumab rapid infusion** option has been added to daratumumab-containing multiple myeloma protocols (UMYDARBD, UMYDARLD). There is no change to the first daratumumab infusion, where the infusion follows the rate titration table in the protocol. Patients who tolerate the first infusion without infusion-related reactions (IRRs), or with a lower grade IRR (grade 2 or less), will receive subsequent infusions over a 90-minute rapid infusion, as outlined below:

Drug Update

INFUSION RATE	DURATION	% OF DOSE TO BE INFUSED
200 mL/h	30 minutes	20% of dose
If no reaction after 30 minutes, then infuse the remainder:		
450 mL/h	60 minutes	80% of dose

In pivotal trials, approximately 47% of patients experienced IRRs with the first daratumumab infusion. The incidence of IRRs reported during second and subsequent infusions was substantially lower (2%-4%). Safety studies have shown that patients experiencing no or lower grade IRRs with their first infusion go on to tolerate subsequent infusions over 90 minutes. Patients experiencing a grade 3 IRR will receive their subsequent daratumumab infusion at the slower infusion rate. Please see the **UMYDARBD** and **UMYDARLD** protocols and PPPOs for more details about IRR grading criteria and daratumumab infusion rates.

Manufacturer Patient Assistance Programs

The listing of patient assistance programs offered by pharmaceutical manufacturers has been updated and can be accessed directly at www.bccancer.bc.ca/mpap. It can also be found on the BC Cancer website under Health Professionals > Systemic Therapy > Reimbursement & Forms.

Cancer Drug Manual

New Monographs and Patient Handouts

BC Cancer drug Monographs, Patient Handouts and the Chemotherapy Preparation and Stability Chart can be accessed from the Cancer Drug Manual.

The Atezolizumab Interim Monograph has been updated to the full **Atezolizumab Monograph**, and the **Atezolizumab Patient Handout** has been developed. Expert review was provided by Dr. Sophie Sun (medical oncologist) and Alysha Bharmal (pharmacist) of the BC Cancer Lung Tumour Group. The updated monograph contains expanded sections, including *Pharmacokinetics* and *Special Precautions*. Atezolizumab is a PD-L1 checkpoint inhibitor that was recently approved at BC Cancer for the treatment of advanced non-small cell lung cancer (ULUAVATZ). The usual dose is 1200 mg IV administered every 3 weeks. Atezolizumab was previously added to the **Chemotherapy Preparation and Stability Chart** and the **Hazardous Drug List.**

Highlights of these documents include:

- immune-related adverse events may be life threatening; prompt management is important and may include withholding atezolizumab, and administering systemic corticosteroids and/or supportive care
- infusion-related reactions are rare (1%)
- severe infections such as sepsis, pneumonia, and herpes encephalitis have been reported

Cancer Drug Manual

Revised Monographs and Patient Handouts

Highlights of key changes and/or updates to the Monographs, Patient Handouts and Chemotherapy Preparation and Stability Chart are listed below:

Asparaginase Chemotherapy Preparation and Stability Chart
ERWINASE®: updated manufacturer and Canadian supplier
KIDROLASE®: updated manufacturer, preparation instructions and product stability

Cabozantinib Monograph
Uses: added liver cancer as a Health Canada approved indication
Cautions and *Side Effects table:* added arterial aneurysm and artery dissection
Dosage Guidelines: updated with new BC Cancer protocol

Cabozantinib Handout
"Get Emergency Help" section: added symptoms for arterial aneurysm and artery dissection

Durvalumab Chemotherapy Preparation and Stability Chart
Updated product stability

Mitomycin Monograph
Uses: updated Health Canada approved indications and other uses
Supply and Storage: updated with currently available Canadian brands
Solution Preparation and Compatibility: updated **Mitomycin Eye Drops** recipe to reflect the current mitomycin formulation

Mitomycin Chemotherapy Preparation and Stability Chart
Added information related to intravesical administration for available brands

Mitoxantrone Chemotherapy Preparation and Stability Chart
Updated with current brands

Osimertinib Monograph
Dosage Guidelines: updated with new BC Cancer protocol

Panitumumab Monograph
Dosage Guidelines: updated renal and hepatic dosing

Pembrolizumab Monograph
Supply and Storage: removed 50 mg vial as no longer available

Pembrolizumab Chemotherapy Preparation and Stability Chart
Updated product stability

Trametinib Monograph
Supply and Storage: removed 1 mg tablet strength as no longer available

Retired Monographs and Patient Handouts

The **Estramustine Monograph** and **Patient Handout** have been retired. Estramustine has been deleted from the **Chemotherapy Preparation and Stability Chart** and the **Hazardous Drug List**.

Cancer Drug Manual

Acknowledgment of CDM Editorial Board and Expert Reviewers

The Cancer Drug Manual writing team – Nadine Badry (Editor) and Lisa Wanbon (writer), both from BC Cancer - Victoria – would like to acknowledge the contributions of the CDM Editorial Review Board and expert reviewers. Thank you for your ongoing support of the CDM and for generously sharing your time and expertise throughout the year.

Editorial Board

Physicians

Angela Chan *BC Cancer – Surrey*
Dave Fenton *BC Cancer – Victoria*
Deepa Wadhwa *BC Cancer – Kelowna*

Nurses

Megan Crosby *BC Cancer – Prince George*
Michelle LaFreniere *BC Cancer – Victoria*

Pharmacists

Mandeep Bains *BC Cancer – Vancouver*
Jennifer Kendrick *BC Children's Hospital*
Sanna Pellatt *BC Cancer – Victoria*

Expert Reviewers

Physicians

Vanessa Bernstein *BC Cancer – Victoria*
Suzanne Carlisle *BC Cancer Oral Oncology Dentistry*
Angela Chan *BC Cancer – Surrey*
Janine Davies *BC Cancer – Vancouver*
Rebecca Dyell *BC Children's Hospital*
Donna Forrest *BC Cancer – Vancouver*
Cheryl Ho *BC Cancer – Vancouver*
Daniel Khalaf *BC Cancer – Vancouver*
Kerry Savage *BC Cancer – Vancouver*
Christine Simmons *BC Cancer – Vancouver*
Sophie Sun *BC Cancer – Vancouver*
Diego Villa *BC Cancer – Vancouver*

Pharmacists

Dawn Annable *BC Cancer – Vancouver*
Alysha Bharmal *BC Cancer – Surrey*
Megan Darbyshire *BC Cancer – Prince George*
Jennifer Kendrick *BC Children's Hospital*
Victoria Kletas *BC Cancer – Vancouver*
Tanya Leduc *BC Cancer – Victoria*
Louisa Pang *BC Cancer – Vancouver*
Kieran Shoker *BC Cancer – Prince George*
Robert Tillmanns *BC Cancer – Abbotsford*

Education Corner

BD® Syringe – Graduation Marking Change

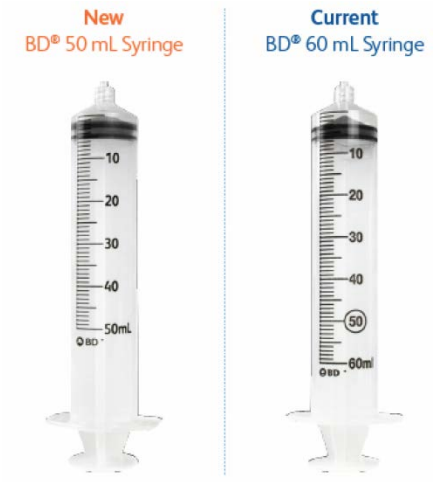
During the compounding process of sterile preparations, appropriate syringe sizes must be selected such that no more than 75% of the syringe's maximal calibrated volume is filled with hazardous drug solution.[1] This minimizes the risk of the plunger accidentally separating from the syringe barrel. If more than 75% of the syringe nominal volume needs to be filled to achieve the desired volume of hazardous drug, then a larger size syringe, or multiple syringes, should be used.

In August 2019, Becton Dickinson (BD®) Medical announced that the graduation markings on all of their 60 mL syringe products are being changed. The graduation markings beyond 50 mL are being removed, and the syringes will now be labeled and sold as 50 mL syringes. BD® has implemented this change to help drive safe sterile compounding practices by preventing the overfill of medications. This practice also supports the safe administration of hazardous drugs. BC Cancer centres will be affected as supplies of the 60 mL BD® syringes become depleted and are replaced with the new 50 mL BD® syringes. BD® is not changing the other syringe sizes.

Education Corner

Further details are as follows:

- The syringes will maintain compatibility with ancillary devices currently being used in the preparation and administration of medications
- The form, fit, function, and raw material composition of the new 50 mL BD® syringes remain unchanged
- Because there are no other changes to these BD® syringes aside from the graduation markings, BC Cancer will continue to fill these syringes to no more than 45 mL of hazardous drug (i.e., 75% of the previously-marked 60 mL syringe volume)
- Filling the 50 mL BD® syringe to a maximum of 45 mL of hazardous drug solution constitutes an exception to the "75%" rule, outlined in the BCCA Pharmacy Practice Standards for Hazardous Drugs® (also known as the 'Safe Handling Manual'). This practice change has been updated accordingly under section **D.2.1 Syringes**.



Benefit Drug List

New Programs

Effective 01 January 2020, the following new treatment programs have been added to the BC Cancer Benefit Drug List:

Protocol Title	Protocol Code	Benefit Status
Therapy for Metastatic Renal Cell Carcinoma using **Cabozantinib**	**UGUCABO**	Restricted
First-Line Treatment of Epidermal Growth Factor Receptor (EGFR) Mutation-Positive Advanced Non-Small Cell Lung Cancer (NSCLC) with **Osimertinib**	**ULUAVOSIF**	Restricted
Treatment of Relapsed/Refractory Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma using **Venetoclax** and **Rituximab**	**ULYVENETOR**	Restricted
Pre-Conditioning Therapy with **Treosulfan** for Pediatric Patients at Risk for Busulfan-Related Toxicity prior to Hematopoietic Stem Cell Transplantation for Malignant Conditions	**Pediatric**	Restricted

Benefit Drug List

Revised Programs

Effective 01 January 2020, the following treatment programs have been transferred to Class I status on the BC Cancer Benefit Drug List:

Protocol Title	Protocol Code	Benefit Status
Neoadjuvant or Adjuvant Therapy for Breast Cancer using Cyclophosphamide, Doxorubicin and Docetaxel	**BRAJDAC**	Class I *(previously Restricted)*
Palliative Therapy for Metastatic Breast Cancer using Eribulin	**BRAVERIB**	Class I *(previously Restricted)*
Therapy for Metastatic Breast Cancer using Capecitabine and Lapatinib	**BRAVLCAP**	Class I *(previously Restricted)*
Palliative Therapy for Metastatic Breast Cancer using Trastuzumab (HERCEPTIN) and Capecitabine	**BRAVTCAP**	Class I *(previously Restricted)*
Therapy for Metastatic Castration-Resistant Prostate Cancer using Radium-223	**GUPRAD**	Class I *(previously Restricted)*
Palliative Therapy for Germ Cell Cancers using Paclitaxel and Gemcitabine	**GUTAXGEM**	Class I *(previously Restricted)*
Advanced Therapy for Relapsed Testicular Germ Cell Cancer using Paclitaxel, Ifosfamide and Cisplatin	**GUTIP**	Class I *(previously Restricted)*
Therapy for Locally Recurrent or Metastatic, RAI-Refractory Differentiated Thyroid Cancer using Lenvatinib	**HNOTLEN**	Class I *(previously Restricted)*
Treatment of Locally Advanced or Metastatic Medullary Thyroid Cancer using Vandetanib	**HNOTVAN**	Class I *(previously Restricted)*
Treatment of ALK-Positive Advanced Non-Small Cell Lung Cancer (NSCLC) with Alectinib	**LUAVALE**	Class I *(previously Restricted)*
Treatment of Relapsed or Refractory Advanced Stage Aggressive B-Cell Non-Hodgkin's Lymphoma with Ifosfamide, Carboplatin, Etoposide and Rituximab	**LYRICE**	Class I *(previously Restricted)*
Treatment of Multicentric Castleman's Disease (MCD) Negative for Human Immunodeficiency Virus (HIV) and Human Herpesvirus-8 (HHV-8) using Siltuximab	**LYSILTUX**	Class I *(previously Restricted)*

Highlights of New & Revised Protocols, PPPOs and Patient Handouts

BC Cancer Protocol Summaries, Provincial Pre-Printed Orders (PPPOs) and Patient Handouts are revised periodically. New, revised or deleted protocols, PPPOs and patient handouts for this month are listed below, with documents revisions indicated in the respective columns. Protocol codes for treatment requiring BC Cancer Compassionate Access Program approval are prefixed with the letter **U**.

New Protocols, PPPOs and Patient Handouts *(new documents checked ☑)*

Code	Protocol	PPPO	Patient Handout	Protocol Title
UGUCABO	☑	☑	☐	Therapy for Metastatic Renal Cell Carcinoma using Cabozantinib
ULUAVOSIF	☑	☑	☑	First-Line Treatment of Epidermal Growth Factor Receptor (EGFR) Mutation-Positive Advanced Non-Small Cell Lung Cancer (NSCLC) with Osimertinib
ULYVENETOR	☑	☑	☑	Treatment of Relapsed/Refractory Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma using Venetoclax and Rituximab

Revised Protocols, PPPOs and Patient Handouts *(revisions in respective columns)*

Code	Protocol	PPPO	Patient Handout	Protocol Title
BRAJAC	-----	-----	*Long-term toxicity clarified*	Adjuvant Therapy for Breast Cancer using Doxorubicin and Cyclophosphamide
BRAJANAS	*Eligibility expanded, Institutional name updated*	-----	-----	Neoadjuvant or Adjuvant Therapy for Breast Cancer using Anastrozole in Postmenopausal Women
BRAJCAP	*Tests updated (total protein removed)*	*Tests updated (total protein removed)*	-----	Therapy of Adjuvant Breast Cancer using Capecitabine
BRAJDAC	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised, AST deleted*	*Protocol Code revised (**U** removed)*	Neoadjuvant or Adjuvant Therapy for Breast Cancer using Cyclophosphamide, Doxorubicin and Docetaxel
BRAJEXE	*Eligibility expanded, Institutional name updated*	-----	-----	Neoadjuvant or Adjuvant Therapy for Breast Cancer using Exemestane in Postmenopausal Women
BRAJLET	*Eligibility expanded, Institutional name updated*	-----	-----	Neoadjuvant or Adjuvant Therapy for Breast Cancer using Letrozole in Postmenopausal Women
UBRAJPAM	*Eligibility clarified*	-----	-----	Adjuvant Therapy for Breast Cancer in Postmenopausal Women using Pamidronate
BRAJZOL2	*Eligibility clarified, Dose Modifications reformatted*	*Baseline Tests clarified*	-----	Adjuvant Therapy for Breast Cancer in Postmenopausal Women using 3-Monthly Zoledronic Acid

Revised Protocols, PPPOs and Patient Handouts *(revisions in respective columns)*				
Code	**Protocol**	**PPPO**	**Patient Handout**	**Protocol Title**
BRAJZOL5	*Eligibility clarified, Dose Modifications reformatted*	*Baseline Tests clarified, Return Appointments revised*	-----	Adjuvant Therapy for Breast Cancer in Postmenopausal Women using 6-Monthly Zoledronic Acid
BRAVERIB	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised*	-----	Palliative Therapy for Metastatic Breast Cancer using Eribulin
BRAVHDMTX	*Alkalinization regimen revised and co-signature requirement clarified*	*Alkalinization regimen revised and co-signature requirement clarified (inpatient)*	-----	Treatment of Meningeal Disease using High-Dose Methotrexate with Leucovorin Rescue
UBRAVKAD	*Eligibility and institutional name updated*	-----	-----	Palliative Therapy for Metastatic Breast Cancer using Trastuzumab Emtansine (KADCYLA)
BRAVLCAP	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised, AST deleted*	-----	Therapy for Metastatic Breast Cancer using Capecitabine and Lapatinib
BRAVTCAP	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised, AST deleted*	-----	Palliative Therapy for Metastatic Breast Cancer using Trastuzumab (HERCEPTIN) and Capecitabine
GIAJCAP	*Tests updated (total protein removed)*	*Tests updated (total protein removed)*	-----	Adjuvant Therapy of Colon Cancer using Capecitabine
GIAVCAP	*Tests updated (total protein removed)*	*Tests updated (total protein removed)*	-----	Palliative Therapy of Advanced Colorectal Cancer using Capecitabine
GIAVCRT	*Protocol Title revised and Eligibility clarified*	-----	-----	Combined Modality Therapy for Metastatic Rectal Carcinoma using Capecitabine and Radiation Therapy
GOTDEMACO	*Premedications and Hydration updated*	*Premedications and Hydration updated*	-----	Therapy for High-Risk Gestational Trophoblastic Neoplasia using Etoposide, Methotrexate, Leucovorin, Dactinomycin, Cyclophosphamide and Vincristine
GOTDLR	*Hydration updated*	*Hydration updated (inpatient)*	-----	Therapy for Low-Risk Gestational Trophoblastic Cancer using Dactinomycin and Methotrexate
GUPRAD	*Protocol Code (**U** removed) and Eligibility revised*	-----	-----	Therapy for Metastatic Castration-Resistant Prostate Cancer using Radium-223

Revised Protocols, PPPOs and Patient Handouts *(revisions in respective columns)*

Code	Protocol	PPPO	Patient Handout	Protocol Title
GUTAXGEM	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised, AST deleted*	-----	Palliative Therapy for Germ Cell Cancers using Paclitaxel and Gemcitabine
GUTIP	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised (inpatient)*	-----	Advanced Therapy for Relapsed Testicular Germ Cell Cancer using Paclitaxel, Ifosfamide and Cisplatin
HNOTLEN	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code revised (**U** removed)*	Therapy for Locally Recurrent or Metastatic, RAI-Refractory Differentiated Thyroid Cancer using Lenvatinib
HNOTVAN	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code revised (**U** removed)*	Treatment of Locally Advanced or Metastatic Medullary Thyroid Cancer using Vandetanib
LUAVALE	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code (**U** removed) and Eligibility revised*	*Protocol Code revised (**U** removed)*	Treatment of ALK-Positive Advanced Non-Small Cell Lung Cancer (NSCLC) with Alectinib
ULUAVOSI	*Tests clarified (CBC)*	*Tests clarified (CBC)*	-----	Treatment of EGFR T790M Mutation-Positive Advanced Non-Small Cell Lung Cancer (NSCLC) with Osimertinib
LYCHLRR	*Minor typo corrected*	-----	-----	Treatment of Indolent B-Cell Lymphoma using Chlorambucil and Rituximab
LYEPOCHR	-----	*Infusion pump drug name entry updated (inpatient)*	-----	Treatment of Lymphoma with Dose-Adjusted Etoposide, Doxorubicin, Vincristine, Cyclophosphamide, Prednisone and Rituximab with Intrathecal Methotrexate
LYIVACR	*Hydration and co-signature updated*	*Hydration and co-signature updated*	-----	Treatment of Burkitt Lymphoma and Leukemia (ALL-L3) with Ifosfamide, Mesna, Etoposide, Cytarabine (IVAC) and Rituximab
ULYRICE	*Ifosfamide/mesna administration updated (separate bags via Y-site), Protocol Code (**U** removed) and Eligibility revised*	*Ifosfamide/mesna administration updated (separate bags via Y-site), Protocol Code (**U** removed) and Eligibility revised*	-----	Treatment of Relapsed or Refractory Advanced Stage Aggressive B-Cell Non-Hodgkin's Lymphoma with Ifosfamide, Carboplatin, Etoposide and Rituximab
LYSILTUX	*Protocol Code (**U** removed) and Eligibility revised, AST deleted*	*Protocol Code (**U** removed) and Eligibility revised*	-----	Treatment of Multicentric Castleman's Disease (MCD) Negative for Human Immunodeficiency Virus (HIV) and Human Herpesvirus-8 (HHV-8) using Siltuximab

Revised Protocols, PPPOs and Patient Handouts *(revisions in respective columns)*				
Code	**Protocol**	**PPPO**	**Patient Handout**	**Protocol Title**
ULYVENETO	*Timing of baseline Tests clarified, Dose Modifications clarified*	*Tests updated (blood sample for uric acid assay to be placed on ice for rasburicase patients)*	*Starting Pack dosing reminder added*	Treatment of Relapsed/Refractory Chronic Lymphocytic Leukemia or Small Lymphocytic Lymphoma using Venetoclax
MYBORPRE	*Dexamethasone duration clarified*	-----	-----	Treatment of Multiple Myeloma using Bortezomib, Dexamethasone with or without Cyclophosphamide as Induction Pre-Stem Cell Transplant
UMYCARDEX	-----	*Tests (Day 8) clarified*	-----	Therapy of Multiple Myeloma using Carfilzomib and Dexamethasone with or without Cyclophosphamide
UMYDARBD	*Daratumumab infusion time revised (rapid infusion)*	*Prednisone dose clarified (cycles 5-8), daratumumab infusion time revised (rapid infusion)*	*Daratumumab infusion time updated (rapid infusion), cyclophosphamide side effects added*	Treatment of Relapsed and Refractory Multiple Myeloma with Daratumumab in Combination with Bortezomib and Dexamethasone with or without Cyclophosphamide
UMYDARLD	*Daratumumab infusion time revised (rapid infusion)*	*Daratumumab infusion time revised (rapid infusion)*	*Daratumumab infusion time updated (rapid infusion)*	Treatment of Relapsed and Refractory Multiple Myeloma with Daratumumab in Combination with Lenalidomide and Dexamethasone
SAAI3	*Ifosfamide/mesna administration updated (separate bags via Y-site)*	*Ifosfamide/mesna administration updated (separate bags via Y-site) (inpatient)*	-----	3-Day Doxorubicin-Ifosfamide-Mesna for Use in Patients with Advanced Soft Tissue Sarcoma
SADTIC	-----	*Dacarbazine dosing units clarified*	-----	High-Dose Single Agent Dacarbazine (DTIC) for Metastatic Soft Tissue Sarcoma
SAHDMTX	*Alkalinization regimen revised and co-signature requirement clarified*	*Alkalinization regimen revised and co-signature requirement clarified (inpatient)*	-----	Treatment of Osteosarcoma using High-Dose Methotrexate with Leucovorin Rescue
SAVDCM	-----	*Dactinomycin dosing and mesna dose rounding clarified*	-----	Adjuvant Therapy for Rhabdomyosarcoma using Vincristine, Dactinomycin, Cyclophosphamide and Mesna
USMAJNIV	*Eligibility clarified*	-----	-----	Adjuvant Treatment of Resected Stage III – IV NED Melanoma using Nivolumab
USMAJNIV4	*Eligibility clarified*	-----	-----	Adjuvant Treatment of Resected Stage III - IV NED Melanoma using 4-Weekly Nivolumab

Resources and Contact Information

Resource	Phone	Email / Toll Free / Fax
Systemic Therapy Update: www.bccancer.bc.ca/health-professionals/clinical-resources/systemic-therapy/systemic-therapy-update		
Systemic Therapy Update Editor	604-877-6000 x 672649	bulletin@bccancer.bc.ca
Oncology Drug Information Cancer Drug Manual Editor Pharmacy Oncology Certification Nurse Educators	604-877-6275 250-519-5500 x 693742 250-712-3900 x 686820 604-877-6000 x 672638	druginfo@bccancer.bc.ca nbadry@bccancer.bc.ca rxchemocert@bccancer.bc.ca nursinged@bccancer.bc.ca
Compassionate Access Program (CAP)	604-877-6277	cap_bcca@bccancer.bc.ca fax 604-708-2026
OSCAR	888-355-0355	oscar@bccancer.bc.ca fax 604-708-2051
Library/Cancer Information	604-675-8003	toll free 888-675-8001 x 8003 requests@bccancer.bc.ca
Library Document Delivery	604-675-8002	requests@bccancer.bc.ca
Pharmacy Professional Practice Professional Practice, Nursing Provincial Systemic Therapy Program	604-877-6000 x 672247 604-877-6000 x 672623 604-877-6000 x 672247	mlin@bccancer.bc.ca BCCancerPPNAdmin@ehcnet.phsa.ca mlin@bccancer.bc.ca
BC Cancer – Abbotsford BC Cancer – Kelowna BC Cancer – Prince George BC Cancer – Surrey BC Cancer – Vancouver BC Cancer – Victoria	604-851-4710 250-712-3900 250-645-7300 604-930-2098 604-877-6000 250-519-5500	toll free 877-547-3777 toll free 888-563-7773 toll free 855-775-7300 toll free 800-523-2885 toll free 800-663-3333 toll free 800-670-3322
Community Oncology Network (CON) sites: To update your contact information, please contact: bulletin@bccancer.bc.ca		

Editorial Review Board