

Regimen Monograph

[Regimen Name](#) | [Drug Regimen](#) | [Cycle Frequency](#) | [Premedication and Supportive Measures](#) | [Dose Modifications](#) | [Adverse Effects](#) | [Interactions](#) | [Recommended Clinical Monitoring](#) | [Administrative Information](#) | [References](#) | [Other Notes](#) | [Disclaimer](#)

A - Regimen Name

CRBPGEMC Regimen

Gemcitabine-CARBOplatin

Disease Site Lung - Non-Small Cell

Intent Adjuvant

Regimen Category **Evidence-Informed :**

Regimen is considered appropriate as part of the standard care of patients; meaningfully improves outcomes (survival, quality of life), tolerability or costs compared to alternatives (recommended by the Disease Site Team and national consensus body e.g. pan-Canadian Oncology Drug Review, pCODR). Recommendation is based on an appropriately conducted phase III clinical trial relevant to the Canadian context OR (where phase III trials are not feasible) an appropriately sized phase II trial. Regimens where one or more drugs are not approved by Health Canada for any indication will be identified under Rationale and Use.

[back to top](#)

B - Drug Regimen

gemcitabine	1000-1250 mg /m ²	IV	Days 1 and 8
CARBOplatin	AUC 5	IV	Day 1

Adjust Carboplatin dose to AUC target (using Calvert formula) as outlined in the "Other Notes" section.

[back to top](#)

C - Cycle Frequency

REPEAT EVERY 21 DAYS

For a usual total of 4 cycles (up to 6 for neoadjuvant), unless disease progression or unacceptable toxicity occurs.

[back to top](#)

D - Premedication and Supportive Measures

Antiemetic Regimen: Moderate + NK1 antagonist (Carboplatin AUC \geq 5) (D1)
Low (D8)

Other Supportive Care:

Also refer to [CCO Antiemetic Recommendations](#).

[back to top](#)

E - Dose Modifications

Doses should be modified according to the protocol by which the patient is being treated.

Dosage with toxicityDose on day 1 of Cycle

Worst Toxicity in Previous Cycle			Gemcitabine	Carboplatin
Non-Hematologic (related organ)		Hematologic	% Full Dose*	% Full Dose*
Grade 3	or	Febrile neutropenia, thrombocytopenic bleeding	75%	75% [#]
Grade 4			Consider discontinuing, or ↓ to 75%	Consider discontinuing, or ↓ to 75%
Day 8 holds in > 1 cycle			75%	100%
<ul style="list-style-type: none"> • Pneumonitis • Hemolytic Uremic Syndrome (HUS) • Stevens-Johnson syndrome(SJS) • Toxic epidermal necrolysis (TEN) • Capillary Leak Syndrome (CLS) • Posterior reversible encephalopathy syndrome (PRES) 			Discontinue	Discontinue
<p>* do not retreat until AGC $\geq 1.5 \times 10^9/L$, platelets $\geq 100 \times 10^9/L$ and toxicity \leq grade 2. [#] use Egorin formula if isolated thrombocytopenia</p>				

Dose on day 8 of Cycle

Toxicity on Day 8 of cycle					Gemcitabine (% Full Dose)
Non-hematologic (related organ)		Hematologic			
		AGC (x 10 ⁶ /L)		Platelets (x 10 ⁶ /L)	
≤ grade 2	and	> 1000	and	> 100,000	100%
≤ grade 2	and	500-1000	or	50,000- 100,000	Consider Omit, or ↓ to 75%
Grade 3 or 4		< 500	or	< 50,000	Omit, ↓ to 75% at restart (if applicable) for non-hematologic toxicity
Pneumonitis HUS SJS TEN CLS PRES		-		-	Discontinue

Hepatic Impairment

Bilirubin		AST/ALT	Gemcitabine (% previous dose)	Carboplatin (% previous dose)
1-2 x ULN	And/or	<2 x ULN	100%	100%
2-4 x ULN		2-5 x ULN	Caution	100%
> 4 x ULN		> 5 x ULN	Caution, consider ↓	Caution, consider ↓

Renal Impairment

CrCl (mL/min)	Gemcitabine (% previous dose)	Carboplatin (% previous dose)
> 60	100%	Use Calvert formula
40-60	100%	
20-40	Caution	
< 20	Consider discontinuing or ↓	Discontinue

[back to top](#)

F - Adverse Effects

Refer to [gemcitabine](#), [CARBOplatin](#) drug monograph(s) for additional details of adverse effects

Most Common Side Effects	Less Common Side Effects, but may be Severe or Life-Threatening
<ul style="list-style-type: none"> • Myelosuppression ± infection, bleeding (may be severe) • Fatigue, flu-like symptoms • Musculoskeletal pain • Rash (may be severe) • Edema • Nausea or vomiting • Diarrhea • Elevated LFTs (may be severe) • Neurotoxicity (ototoxicity) • Nephrotoxicity, proteinuria • Abnormal electrolytes 	<ul style="list-style-type: none"> • Pneumonitis/ARDS • Hemolytic-uremic syndrome • Secondary malignancies • Capillary leak syndrome • Arterial/venous thromboembolism • Arrhythmia • Cardiotoxicity • Hypersensitivity • Vasculitis

[back to top](#)

G - Interactions

Refer to [gemcitabine](#), [CARBOplatin](#) drug monograph(s) for additional details

[back to top](#)

I - Recommended Clinical Monitoring

Treating physicians may decide to monitor more or less frequently for individual patients but should always consider recommendations from the product monograph.

Recommended Clinical Monitoring

- Clinical toxicity assessment (including flu-like symptoms, fatigue, rash, edema, GI, pulmonary, neurotoxicity, infection, bleeding, ototoxicity); at each visit

- CBC before each cycle and on day 8.
- Baseline and regular liver function tests
- Baseline and regular renal function tests and electrolytes (including magnesium)
- Grade toxicity using the current [NCI-CTCAE \(Common Terminology Criteria for Adverse Events\) version](#)

[back to top](#)

J - Administrative Information

Approximate Patient Visit	Day 1: 2 hours; Day 8: 45 minutes
Pharmacy Workload (average time per visit)	28.715 minutes
Nursing Workload (average time per visit)	42.917 minutes

[back to top](#)

K - References

Kris MG, Gaspar LE, Chaff JE, et al. Adjuvant Systemic Therapy and Adjuvant Radiation Therapy for Stage I to IIIA Completely Resected Non-Small-Cell Lung Cancers: American Society of Clinical Oncology/Cancer Care Ontario Clinical Practice Guideline Update. J Clin Oncol 2017;35(25):2960-74.

Usami N, Yokoi K, Hasegawa Y, et al. Phase II study of carboplatin and gemcitabine as adjuvant chemotherapy in patients with completely resected non-small cell lung cancer: a report from the Central Japan Lung Study Group, CJLSG 0503 trial. Int J Clin Oncol. 2010 Dec;15(6):583-7.

Westeel V, Quoix E, Puyraveau M, et al; Intergroupe Francophone de Cancérologie Thoracique.. A randomised trial comparing preoperative to perioperative chemotherapy in early-stage non-small-cell lung cancer (IFCT 0002 trial). Eur J Cancer. 2013 Aug;49(12):2654-64.

PEBC Advice Documents or Guidelines

- [Adjuvant Systemic and Radiation Therapy for Stage I to IIIA Completely Resected Non-Small-Cell Lung Cancers: ASCO-CCO Clinical Practice Guideline Update](#)

June 2019 Updated emetic risk category and cycle frequency section; added PEBC guideline link

[back to top](#)

L - Other Notes

Calvert Formula

DOSE (mg) = target AUC X (GFR + 25)

- AUC = product of serum concentration (mg/mL) and time (min)
- GFR (glomerular filtration rate) expressed as measured Creatinine Clearance or estimated from Serum Creatinine (by Cockcroft and Gault method or Jelliffe method)

(Calvert AH, Newell DR, Gumbrell LA, et al, Carboplatin dosage: Prospective evaluation of a simple formula based on renal function. J Clin Oncol, 1989; 7: 1748-1756)

[back to top](#)

M - Disclaimer

Regimen Abstracts

A Regimen Abstract is an abbreviated version of a Regimen Monograph and contains only top level information on usage, dosing, schedule, cycle length and special notes (if available). It is intended for healthcare providers and is to be used for informational purposes only. It is not intended to constitute or be a substitute for medical advice, and all uses of the Regimen Abstract are subject to clinical judgment. Such information is provided on an "as-is" basis, without any representation, warranty, or condition, whether express, or implied, statutory or otherwise, as to the information's quality, accuracy, currency, completeness, or reliability, and Cancer Care Ontario disclaims all liability for the use of this information, and for any claims, actions, demands or suits that arise from such use.

Information in regimen abstracts is accurate to the extent of the ST-QBP regimen master listings, and has not undergone the full review process of a regimen monograph. Full regimen monographs will be published for each ST-QBP regimen as they are developed.

Regimen Monographs

Refer to the [New Drug Funding Program](#) or [Ontario Public Drug Programs](#) websites for the most up-to-date public funding information.

The information set out in the drug monographs, regimen monographs, appendices and symptom management information (for health professionals) contained in the Drug Formulary (the "Formulary") is intended for healthcare providers and is to be used for informational purposes only. The information is not intended to cover all possible uses, directions, precautions, drug interactions or adverse effects of a particular drug, nor should it be construed to indicate that use of a particular drug is safe, appropriate or effective for a given condition. The information in the Formulary is not intended to constitute or be a substitute for medical advice and should not be relied upon in any such regard. All uses of the Formulary are subject to clinical judgment and actual prescribing patterns may not follow the information provided in the Formulary.

The format and content of the drug monographs, regimen monographs, appendices and symptom management information contained in the Formulary will change as they are reviewed and revised on a periodic basis. The date of last revision will be visible on each page of the monograph and regimen. Since standards of usage are constantly

evolving, it is advised that the Formulary not be used as the sole source of information. It is strongly recommended that original references or product monograph be consulted prior to using a chemotherapy regimen for the first time.

Some Formulary documents, such as the medication information sheets, regimen information sheets and symptom management information (for patients), are intended for patients. Patients should always consult with their healthcare provider if they have questions regarding any information set out in the Formulary documents.

While care has been taken in the preparation of the information contained in the Formulary, such information is provided on an "as-is" basis, without any representation, warranty, or condition, whether express, or implied, statutory or otherwise, as to the information's quality, accuracy, currency, completeness, or reliability.

CCO and the Formulary's content providers shall have no liability, whether direct, indirect, consequential, contingent, special, or incidental, related to or arising from the information in the Formulary or its use thereof, whether based on breach of contract or tort (including negligence), and even if advised of the possibility thereof. Anyone using the information in the Formulary does so at his or her own risk, and by using such information, agrees to indemnify CCO and its content providers from any and all liability, loss, damages, costs and expenses (including legal fees and expenses) arising from such person's use of the information in the Formulary.

[back to top](#)