

BC Cancer Protocol Summary for Treatment of Locally Advanced Squamous Cell Carcinoma of the Head and Neck with Concurrent 3-Weekly CARBOplatin and Radiation

Protocol Code	<i>HNLACART3</i>
Tumour Group	<i>Head and Neck</i>
Contact Physician	<i>Dr. Cheryl Ho</i>

ELIGIBILITY:

Patients must have:

- Stage III-IV squamous cell carcinoma of the of the head and neck including unknown primary,
- ECOG performance status 0-2,
- Suitable for radical irradiation, and
- Ineligible for concurrent CISplatin:
 - Renal insufficiency, creatinine clearance less than 45 ml/min
 - Cardiac disease that results in an intolerance to fluid load
 - Severe neuropathy
 - Marked hearing loss
 - Other **significant** risk factors that render patient ineligible for concurrent CISplatin however the risk of disease is sufficient to warrant concurrent treatment

Patients with squamous cell carcinoma of the head and neck or squamous cell carcinoma of unknown primary who are unable to tolerate the standard options of HNLAPRT, (CISplatin 100mg/m² q3wk) or HNNLAPRT, (CISplatin 40mg/m² weekly), may receive HNLACARTW or HNLACART3 as an alternative

EXCLUSIONS:

- Patients who are eligible for CISplatin should be treated accordingly as the best evidence supports CISplatin as a radiosensitizer

SUPPORTIVE CARE:

- Prior to initiation of treatment, patients will be referred for consultation to Dentistry and Nutrition Services
- Placement of a feeding gastrostomy tube prior to treatment is encouraged if there has been significant weight loss (ie., greater than 10% from baseline)
- Standard oral hygiene during treatment (sodium bicarbonate mouth rinse, nystatin/fluconazole for fungal infections, antibiotics for documented infections)

TESTS:

- Baseline: CBC & Diff, creatinine, ALT, total bilirubin, sodium, potassium, magnesium, calcium and phosphate, albumin, BUN
- Before each cycle: CBC & Diff, creatinine, sodium, potassium, magnesium, calcium and phosphate, albumin
- If clinically indicated: ALT, total bilirubin

PREMEDICATIONS:

- Antiemetic protocol for highly emetogenic chemotherapy (see protocol SCNAUSEA)

TREATMENT:

Drug	Dose	BC Cancer Administration Guideline
CARBOplatin	Dose = AUC 5 x (GFR*+ 25)	IV in 100 to 250 mL NS over 30 minutes

Repeat every 21 days x 3 cycles

Give every three weeks for 3 cycles concurrent with radiation therapy, starting the first day of radiation therapy. Chemotherapy is only to be administered if concurrent with radiation.

**Measured GFR* (e.g. nuclear renogram) is preferred in circumstances of co-morbidity that could affect renal function (third-space fluid accumulations, hypoproteinemia, potentially inadequate fluid intake, age greater than 70, etc.). The lab reported GFR (MDRD formula) may be used as an alternative to the Cockcroft-Gault estimate of GFR; the estimated GFR reported by the lab or calculated using the Cockcroft-Gault equation should be capped at 125 mL/min when it is used to calculate the initial carboplatin dose. When a nuclear renogram is available, this clearance would take precedence.

Cockcroft-Gault Formula

$$\text{CrCl} = \frac{N (140 - \text{age}) \times \text{weight (kg)}}{\text{serum creatinine (micromol/L)}}$$

Where N = 1.04 for females, and 1.23 for males

Note: The same method of estimation should be used throughout the treatment course (i.e. if lab reported GFR was used initially, this should be used for dosing in all subsequent cycles and not the Cockcroft- Gault estimate).

Recalculate GFR if creatinine increases by greater than 20% or rises above the upper limit of normal.

RADIATION:

70 Gy external beam thoracic radiotherapy in 35 fractions over 7 weeks
(treatment daily Monday to Friday, no planned interruptions)

DOSE MODIFICATIONS:**1. Hematology:**

ANC (x10 ⁹ /L)		Platelets (x10 ⁹ /L)	Dose
greater than or equal to 1.0	and	greater than or equal to 100	100%
less than 1.0	or	less than 100	Delay 1 week or until recovery

- Neutropenic fever:** If febrile neutropenia occurs at any point during treatment, reduce subsequent CARBOplatin doses to 80%.
- Renal dysfunction:** If significant increase (greater than 20% or rises above the upper limit of normal) in creatinine, recheck/recalculate GFR and recalculate CARBOplatin dose using new GFR.

PRECAUTIONS:

- Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively.
- Hypersensitivity:** Reactions to CARBOplatin may develop in patients who have been extensively pre-treated with this agent. Refer to BC Cancer Hypersensitivity Guidelines.

Call Nicole Chau or tumour group delegate at (604) 877-6000 with any problems or questions regarding this treatment program

REFERENCES:

- Pignon JP, le Maître A, Maillard E, Bourhis J; MACH-NC Collaborative Group. Meta-analysis of chemotherapy in head and neck cancer (MACH-NC): an update on 93 randomised trials and 17,346 patients. *Radiother Oncol.* 2009 Jul;92(1):4-14. doi: 10.1016/j.radonc.2009.04.014. Epub 2009 May 14. PMID: 19446902.
- Denis F, Garaud P, Bardet E, et al. Final results of the 94-01 French Head and Neck Oncology and Radiotherapy Group randomized trial comparing radiotherapy alone with concomitant radiochemotherapy in advanced-stage oropharynx carcinoma. *J Clin Oncol.* 2004;22(1):69-76. doi:10.1200/JCO.2004.08.02.
- Xiang, M., Colevas, A., Holsinger, F., Le, Q. X., & Beadle, B. M. (2019). Survival After Definitive Chemoradiotherapy With Concurrent Cisplatin or Carboplatin for Head and Neck Cancer, *Journal of the National Comprehensive Cancer Network J Natl Compr Canc Netw*, 17(9), 1065-1073.
- Aguiar PN Jr, Tadokoro H, da Silva GF, et al. Definitive chemoradiotherapy for squamous head and neck cancer: cisplatin versus carboplatin? A meta-analysis. *Future Oncol.* 2016;12(23):2755–2764. doi:10.2217/fon-2016-0.