

# BC Cancer Protocol Summary For Modified PCV Chemotherapy Of Brain Tumours Using Procarbazine, Lomustine (CCNU) and vinCRISTine

**Protocol Code**

CNMODPCV

**Tumour Group**

Neuro-oncology

**Contact Physician**

Dr. Brian Thiessen

## ELIGIBILITY:

- [Adjuvant therapy for adult embryonal tumours over age 40, grade 2 oligodendroglioma and astrocytoma](#)
- Adequate hematological, renal and hepatic function

## TESTS:

- Baseline: CBC and diff, platelets, serum creatinine, [ALT](#), bilirubin, serum glucose (for patients on dexamethasone), anticonvulsant levels
- Before each cycle: CBC and diff, platelets, serum creatinine, [ALT](#), bilirubin
- Day 22: CBC and diff, platelets
  - CBC and diff, [ALT](#), bilirubin, serum creatinine **before** last cycle.
- Imaging: CT or MR every 2<sup>nd</sup> cycle

## PREMEDICATIONS

- ondansetron PO 8 mg q12h for 36 hours (starting 30 min before lomustine), then prochlorperazine PO or dimenhydrinate PO prn
- dexamethasone PO 8 mg q12h for 36 hours (starting 30 min before lomustine), then prochlorperazine PO or dimenhydrinate PO prn
- if patients are nauseated with procarbazine, may divide procarbazine dose or add regular prochlorperazine

**TREATMENT:**

Day	Drug	Dose	BC Cancer Administration Guideline
1	vinCRISTine	1.4 mg/m <sup>2</sup> (see below for maximum cap dose)*	in 50 mL NS over 15 mins
1	lomustine (CCNU)	110 mg/m <sup>2</sup> at bedtime	PO
2	procarbazine	60 mg/m <sup>2</sup> /day, days 2 to 15	PO
22	vinCRISTine	1.4 mg/m <sup>2</sup> (see below for maximum cap dose)*	in 50 mL NS over 15 mins

- Adjuvant chemotherapy for primitive neuroectodermal tumour (PNET):
  - Repeat every 6 weeks x **4 to 6** cycles as tolerated
- Recurrent oligodendrogliomas and mixed gliomas not previously exposed to PCV or with a prior good response to PCV
  - Repeat every 6 weeks x **4 to 6** cycles based on response and tolerability
- Low grade gliomas, to start two weeks post radiation therapy
  - Repeat every 6 weeks x **6** cycles as tolerated

\*For planned treatment greater than 4 cycles, cap vinCRISTine at 2 mg

**DOSE MODIFICATIONS:**

1. **Hematological:** modify lomustine and procarbazine, not vinCRISTine.

For **Day 1**/Beginning Cycle counts:

ANC (x10 <sup>9</sup> /L)		Platelets (x10 <sup>9</sup> /L)	Dose (lomustine, procarbazine)
greater than or equal to 1.5	and	greater than or equal to 100	give 100%
1.0 to less than 1.5	and/or	70 to less than 100	give 80%*
less than 1.0	and/or	less than 70	delay 1 week and resume at 60%

\*For lomustine, this dose becomes the new 100% dose for subsequent treatments

For **Day 22** counts

- modify Day 1 dosing for the rest of the treatment.
- If Day 22 counts and Day 1 counts are low, the reduction is based on the lowest of the two counts (i.e., if Day 22 counts dictated a 60% dose reduction and the Day 1 counts dictated a 80% dose reduction, then the dose should be lowered to 60%)
- If dose modification is required for the first treatment cycle, reconsider the program's advisability as severe myelosuppression is common in future cycles.
- In patients with low grade gliomas, for undue toxicity switch to CNTEMOZ for remaining cycles

ANC (x10 <sup>9</sup> /L)		Platelets (x10 <sup>9</sup> /L)	Dose (lomustine, procarbazine)
greater than <b>or equal to</b> 1.5	and	greater than <b>or equal to</b> 100	give 100%
1.0 to <b>less than</b> 1.5*	and/or	75 to <b>less than</b> 100*	give 80%
less than 1.0*	and/or	less than 75*	give 60%

\*NOTE: Patients with these variables should have careful monitoring (at least twice a week) of WBC and platelet counts. [Trimethoprim/sulfamethoxazole DS one tablet po q Monday, Wednesday and Friday is recommended for patients requiring dexamethasone for longer than 4 weeks.](#) Platelet TRANSFUSIONS for platelet less than 40 x10<sup>9</sup>/L and downward trend. Consult contact physician if any questions.

2. **Renal dysfunction:** If creatinine clearance less than 50 mL/min, reconsider treatment program
3. **Hepatic dysfunction:** hold **lomustine** if **ALT** greater than 5 x ULN or bilirubin greater than 25 micromol/L until **ALT** less than or equal to 1.5 x ULN or bilirubin less than 25 micromol/L, then reinstitute at 60% dose.
4. **Respiratory:** Review case
5. **Intolerable side effects:** Re-evaluate treatment. For patients with low grade gliomas, switch to CNTEMOZ for remaining cycles.

### PRECAUTIONS:

1. **Peripheral neuropathy:** Numbness and tingling of fingers and toes; distal weakness, foot drop; constipation; jaw pain; mild to moderate nausea/vomiting.
2. **Psycho-neurological complaints:** including drowsiness
3. **Pancytopenia:** often prolonged thrombocytopenia; possible renal damage
4. **Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively
5. **Extravasation:** vinCRISTine causes pain and tissue necrosis if extravasated. Refer to BCCA Extravasation Guidelines
6. **Hypersensitivity:** Reactions are common with procarbazine. Refer to BCCA Hypersensitivity Guidelines. \*Hypertensive crisis if taking MAO-like drugs or foods

high in tyramine - diet sheet to be given while on procarbazine. Infrequent allergy to procarbazine includes cough.

**Call Dr. Brian Thiessen or tumour group delegate at (604) 877-6000 or 1-800-663-3333 with any problems or questions regarding this treatment program.**

#### **References**

Buckner JC, et al. Phase III study of radiation therapy with or without adjuvant procarbazine, CCNU, and vincristine in low-grade glioma: RTOG 9802 with Alliance, ECOG, and SWOG. J Clin Oncol 2014;32:5s (abstr 2000)