

Regimen Reference Order – CNS – PCV

ARIA: CNS – PCV (Anaplastic)

CNS – PCV (Low Grade)

Planned Course: Every 42 days for 6 cycles (Anaplastic) OR
Every 56 days for 6 cycles (Low Grade)

Indication for Use: Oligodendroglioma, Astrocytoma; Anaplastic OR
Oligodendroglioma, Astrocytoma; Low Grade

CVAD: At Provider's Discretion

Proceed with treatment if:

Day 1

- ANC equal to or greater than $1.5 \times 10^9/L$ AND Platelets equal to or greater than $100 \times 10^9/L$

Day 8 and 29

- Bloodwork not required to proceed with therapy
- ❖ Contact Physician if parameters not met

SEQUENCE OF MEDICATION ADMINISTRATION

Pre-treatment Requirements

Drug	Dose	CCMB Administration Guideline
Not Applicable		

Treatment Regimen – CNS – PCV

Drug	Dose	CCMB Administration Guideline
Cycle 1		
Day 1		
aprepitant	125 mg	Orally 60 minutes prior to chemotherapy (Self-administered at home)
ondansetron	16 mg	Orally 60 minutes prior to chemotherapy (Self-administered at home)
lomustine	110 mg/m^2	Orally at bedtime on an empty stomach Swallow whole (Self-administered at home)
Day 2		
aprepitant	80 mg	Orally once daily (Self-administered at home)
ondansetron	8 mg	Orally twice daily (Self-administered at home)

Drug	Dose	CCMB Administration Guideline
Day 3		
aprepitant	80 mg	Orally once daily (Self-administered at home)
Day 8		
Establish primary solution 500 mL of: normal saline		
vincristine	1.4 mg/m ² ; maximum dose 2 mg	IV in normal saline 25 mL over 2 to 3 minutes by gravity infusion <i>Concentration dependent drug: Pharmacy will adjust diluent volume to ensure drug stability</i>
Days 8 to 21		
ondansetron	8 mg	Orally 30 minutes prior to procarbazine (Self-administered at home)
procarbazine	60 mg/m ² /day SEE DOSING TABLE BELOW*	Orally once daily at bedtime Take on an empty stomach. Swallow whole (Self-administered at home)
Day 29		
Establish primary solution 500 mL of: normal saline		
vincristine	1.4 mg/m ² ; maximum dose 2 mg	IV in normal saline 25 mL over 2 to 3 minutes by gravity infusion <i>Concentration dependent drug: Pharmacy will adjust diluent volume to ensure drug stability</i>
Iomustine (CeeNU®) available dosage strengths: 10 mg and 40 mg capsules Classification: Cytotoxic, Hazardous procarbazine (Matulane®) available dosage strength: 50 mg capsule Classification: Cytotoxic, Hazardous		
All doses will be automatically rounded that fall within the DSG Approved Dose Bands. See CNS DSG – Dose Banding document for more information		

REQUIRED MONITORING

Day 1

- CBC, serum creatinine, electrolytes, liver enzymes, total bilirubin and albumin as per Physician Orders

Day 8 and 29

- No bloodwork is required prior to Day 8 and Day 29 vincristine doses

Recommended Support Medications

Drug	Dose	CCMB Administration Guideline
metoclopramide	20 mg	Orally every 4 hours as needed for nausea and vomiting

DISCHARGE INSTRUCTIONS

- procarbazine has potential for drug-drug interactions. Patient should notify clinic prior to starting any new medication
- procarbazine is a monoamine oxidase inhibitor (MAOI) and can interact with tyramine in certain foods. Reinforce recommendation to follow a low tyramine diet 7 days before procarbazine, while taking procarbazine and for 7 days after procarbazine
- lomustine can rarely cause pulmonary fibrosis. Patients should report any signs of respiratory complications
- Reinforce applicable safe handling precautions of medications, blood and body fluids for 48 hours after completion of chemotherapy

ADDITIONAL INFORMATION

- All oral agents as part of this regimen (lomustine, procarbazine, aprepitant, ondansetron, metoclopramide) will be dispensed by CancerCare Manitoba Pharmacy

procarbazine Dosing – CNS – PCV regimen

In the CNS - PCV regimen, procarbazine should be dosed at 60 mg/m²/day on Days 8 to 21 of the 42-day cycle. Because procarbazine is only available as a 50 mg capsule, there is limited flexibility in delivering the appropriate daily dose. As such, the dosing schedule may require alternating daily doses to ensure an appropriate dose over the course of the cycle.

While the Medical Oncology Manager (ARIA®) application is used for order entry and a specific regimen for the CNS - PCV regimen is available, the dose calculations required for procarbazine are too complex to build into the ARIA-based regimen. Manual calculation and verification of procarbazine dosing is required and dosing instructions will require manual entry in ARIA under a “take as directed” prescription for procarbazine.

Here are a few steps to assist with dose calculation of procarbazine in the CNS – PCV regimen.

1) Determine the total cycle dose of procarbazine:

$$60 \text{ mg/m}^2/\text{day} \times 14 \text{ days} = 840 \text{ mg/m}^2/\text{cycle}$$

$$\text{BSA (m}^2\text{)} \times 840 \text{ mg/m}^2/\text{cycle} = \text{_____ mg of procarbazine required for the cycle.}$$

Round this procarbazine amount to the nearest 50 mg.

Example: BSA = 2.2 m²

$$840 \text{ mg/m}^2/\text{cycle} \times 2.2 \text{ m}^2 = 1865 \text{ mg, or } \mathbf{1865 \text{ mg of procarbazine required for cycle}}$$

2) Determine the alternating dose schedule for procarbazine:

A total of 14 days of procarbazine will be required. It is most likely that alternating doses (e.g. 150 mg, 100 mg orally daily) will be required to administer the appropriate procarbazine dose over the 14-day course. Please refer to Table 1 procarbazine Dosing for suggested dosing schedules, according to BSA.

3) Enter procarbazine daily dosing instructions into ARIA:

The procarbazine prescription as part of the CNS - PCV regimen in ARIA should be a “take as directed” prescription, “Pick-Up – Internal”. Once the doses of procarbazine have been determined, the administration instructions and dispensing quantity for procarbazine should be manually entered into ARIA.

Example:

Rx: procarbazine 50 mg capsule – Take as directed

Administration instructions:

Take 150 mg (three 50 mg capsules) orally at bedtime on Days 9-10, 12-13, 15-16, 18-19, and 21. Take 100 mg (two 50 mg capsules) orally at bedtime on Days 8, 11, 14, 17, and 20. Take procarbazine on an empty stomach 30 minutes after ondansetron. Please refer to medication calendar for further details. Refrain from alcohol and tyramine-containing foods for at least 7 days before starting, during, and for at least 7 days after completing procarbazine prescription.

Quantity: 37 x 50 mg capsules

Table 1: procarbazine Dosing – Sorted by Descending BSA

BSA (m ²)	Total Cycle Procarbazine Dose	Number of days with 150 mg dose	Number of days with 100 mg dose	Number of days with 50 mg dose
2.48 or greater	2100 mg (42 capsules)	14 (Day 8-21)	0	0
2.41-2.47	2050 mg (41 capsules)	13 (Day 8-20)	1 (Day 21)	0
2.35-2.40	2000 mg (40 capsules)	12 (Days 9-14, 16-21)	2 (Days 8, 15)	0
2.30-2.34	1950 mg (39 capsules)	11 (Days 9-12, 14-17, 19-21)	3 (Days 8, 13, 18)	0
2.23-2.29	1900 mg (38 capsules)	10 (Days 9-11, 13-15, 17-19, 21)	4 (Days 8, 12, 16, 20)	0
2.17-2.22	1850 mg (37 capsules)	9 (Days 9-10, 12-13, 15-16, 18-19, 21)	5 (Days 8, 11, 14, 17, 20)	0
2.11-2.16	1800 mg (36 capsules)	8 (Days 9, 11, 13, 15, 16, 18, 19, 21)	6 (Days 8, 10, 12, 14, 17, 20)	0
2.06-2.10	1750 mg (35 capsules)	7 (Days 9, 11, 13, 15, 17, 19, 21)	7 (Day 8, 10, 12, 14, 16, 18, 20)	0
2.0-2.05	1700 mg (34 capsules)	6 (Days 8, 10, 12, 14, 17, 20)	8 (Days 9, 11, 13, 15, 16, 18, 19, 21)	0
1.94-1.99	1650 mg (33 capsules)	5 (Days 8, 11, 14, 17, 20)	9 (Days 9-10, 12-13, 15-16, 18-19, 21)	0
1.88-1.93	1600 mg (32 capsules)	4 (Days 8, 12, 16, 20)	10 (Days 9-11, 13-15, 17-19, 21)	0
1.82-1.87	1550 mg (31 capsules)	3 (Days 8, 13, 18)	11 (Days 9-12, 14-17, 19-21)	0
1.76-1.81	1500 mg (30 capsules)	2 (Days 8, 15)	12 (Days 9-14, 16-21)	0
1.70-1.75	1450 mg (29 capsules)	1 (Day 21)	13 (Days 8-20)	0
1.64-1.69	1400 mg (28 capsules)	0	14 (Days 8-21)	0
1.58-1.63	1350 mg (27 capsules)	0	13 (Days 8-20)	1 (Day 21)
1.52-1.57	1300 mg (26 capsules)	0	12 (Days 9-14, 16-21)	2 (Days 8, 15)
1.46-1.51	1250 mg (25 capsules)	0	11 (Days 9-12, 14-17, 19-21)	3 (Days 8, 13, 18)
1.40-1.45	1200 mg (24 capsules)	0	10 (Days 9-11, 13-15, 17-19, 21)	4 (Days 8, 12, 16, 20)
1.34-1.39	1150 mg (23 capsules)	0	9 (Days 9-10, 12-13, 15-16, 18-19, 21)	5 (Days 8, 11, 14, 17, 20)
1.28-1.33	1100 mg (22 capsules)	0	8 (Days 9, 11, 13, 15, 16, 18, 19, 21)	6 (Days 8, 10, 12, 14, 17, 20)
1.27 or less	1050 mg (21 capsules)	0	7 (Days 9, 11, 13, 15, 17, 19, 21)	7 (Day 8, 10, 12, 14, 16, 18, 20)