Regimen Reference Order

BRST – pembrolizumab + gemcitabine + CARBOplatin

ARIA: BRST - [pembro + gem + CARBO]

Planned Course: **Every 21 days until disease progression or unacceptable toxicity or up to a maximum of 2 years of therapy (35 cycles)**

Indication for Use: **Breast Cancer; Triple Negative; Metastatic**

Drug Alert: Immune Checkpoint Inhibitor (pembrolizumab)

CVAD: At Provider's Discretion

Proceed with treatment if:

Day 1

- ***ANC equal to or greater than 1.5 x 10^9/L AND Platelets equal to or greater than 100 x 10^9/L***
- ***AST/ALT equal to or less than 3 times the upper limit of normal***
- ***Total bilirubin equal to or less than 1.5 times the upper limit of normal***
- ***Creatinine clearance is equal to or greater than 30 mL/minute***

Day 8

- ***ANC equal to or greater than 1.5 x 10^9/L AND Platelets equal to or greater than 100 x 10^9/L***
  - ❖ **Contact Physician if parameters not met**

SEQUENCE OF MEDICATION ADMINISTRATION

Pre-treatment Requirements

Drug	Dose	CCMB Administration Guideline
Not Applicable		

Treatment Regimen – BRST – pembrolizumab + gemcitabine + CARBOplatin

Establish primary solution 500 mL of: normal saline

Drug	Dose	CCMB Administration Guideline
Day 1		
pembrolizumab	2 mg/kg	IV in normal saline 50 mL over 30 minutes *Use 0.2 or 0.22 micron filter*
ondansetron	16 mg	Orally 30 minutes pre-chemotherapy
dexamethasone	12 mg	Orally 30 minutes pre-chemotherapy
gemcitabine	1000 mg/m^2	IV in normal saline 250 mL over 30 minutes
CARBOplatin	AUC 2 mg/mL.min; maximum dose 300 mg (see table below)	IV in D5W 250 mL over 30 minutes

Day 8		
ondansetron	16 mg	Orally 30 minutes pre-chemotherapy
dexamethasone	12 mg	Orally 30 minutes pre-chemotherapy
gemcitabine	1000 mg/m^2	IV in normal saline 250 mL over 30 minutes
CARBOplatin	AUC 2 mg/mL.min; maximum dose 300 mg (see table below)	IV in D5W 250 mL over 30 minutes
Maximum pembrolizumab dose is 200 mg All doses will be automatically rounded that fall within CCMB Approved Dose Bands. See Dose Banding document for more information		

In the event of an infusion-related hypersensitivity reaction, refer to the **'Hypersensitivity Reaction Standing Order'**

REQUIRED MONITORING

All Cycles

Day 1

- CBC, serum creatinine, urea, electrolytes, liver enzymes, total bilirubin, albumin, glucose and TSH as per Physician Orders
- Medical oncologist or designate (i.e. family practitioner in oncology) must assess patient for immune-mediated adverse reactions prior to each cycle
- Full vital signs (temperature, heart rate, respiratory rate, blood pressure and O_2 saturation) at baseline and as clinically indicated
- No observation period is required after pembrolizumab administration. Patient can be discharged from treatment room if stable whether they had a reaction or not

Day 8

- CBC

Recommended Support Medications

Drug	Dose	CCMB Administration Guideline
dexamethasone	8 mg	Orally once daily on Days 2, 3, 9 and 10
metoclopramide	10 - 20 mg	Orally every 4 hours as needed for nausea and vomiting

DISCHARGE INSTRUCTIONS

- Patients should be instructed to contact their cancer team immediately if symptoms of hypersensitivity reactions occur after discharge
- Confirm that patient has received the CCMB Immune Checkpoint Inhibitor Medical Alert wallet card
- Reinforce to patient the immune-mediated adverse reactions and importance of reporting immediately
    - For severe symptoms, the patient should be instructed to go to the nearest emergency room. Oncologist on call should be contacted
- Instruct patient to continue taking anti-emetic(s) at home
- Reinforce applicable safe handling precautions of medications, blood and body fluids for 48 hours after completion of chemotherapy

ADDITIONAL INFORMATION

- pembrolizumab is an Immune Checkpoint Inhibitor. Consult with medical oncologist for immune-mediated adverse reactions; corticosteroids are often indicated
- CARBOplatin dosing considerations:
  - CCMB Breast DSG uses **actual body weight** to calculate GFR
  - CCMB Breast DSG uses a maximum CARBOplatin dose of 300 mg for this regimen
  - If calculated CARBOplatin differs **more than 10%** from prescribed CARBOplatin dose, contact the prescriber

CARBOplatin Dosing Calculations per CCMB Breast DSG

Calculation of CARBOplatin dose: (maximum 300 mg)

Dose (mg) = target AUC (GFR + 25)

$$\text{GFR} = \frac{\text{N} \times (140 - \text{age in years}) \times \text{Actual Body Weight (kg)}}{\text{serum creatinine in micromol/L}} = \_\_\_ \text{ mL/min}$$

N = 1.23 in males
N = 1.04 in females

$$\frac{\text{AUC (mg/mL.min)}}{2} \times \frac{\text{GFR + 25 (mL/min)}}{\_\_\_\_ + 25} = \frac{\text{Total Dose (mg)}}{\quad}$$

AUC= Area Under Curve

The estimated creatinine clearance is based on limited evidence. Sound clinical judgment and interpretation of the estimation are required, because the equation above may not be appropriate for some patient populations (for example, acute renal failure).