

Regimen Reference Order – THOR – PEMEtrexed + CARBOplatin (NSCLC)

ARIA: LUNG – [PEMEtrexed + CARBO (NSCLC)]

LUNG – [PEMEtrexed (maint) (NSCLC)]

LUNG – PEMEtrexed support (NSCLC)

Planned Course: PEMEtrexed + CARBOplatin every 21 days for 4 cycles, followed by PEMEtrexed every 21 days until disease progression or unacceptable toxicity

Indication for Use: Lung Cancer Non-Small Cell Non-Squamous Metastatic

CVAD: At Provider's Discretion

Proceed with treatment if:

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

SEQUENCE OF MEDICATION ADMINISTRATION

Pre-treatment Requirements

Drug	Dose	CCMB Administration Guideline
folic acid	1 mg	Orally daily beginning 7 – 14 days prior to first dose of PEMEtrexed and continuing daily until 21 days after the last dose of PEMEtrexed (Self-administered at home)
vitamin B12	1000 mcg	Intramuscularly 7 – 14 days prior to first dose of PEMEtrexed (Note: vitamin B12 continues every 9 weeks throughout treatment and for one additional dose upon discontinuation of PEMEtrexed)
dexamethasone	8 mg	Orally once daily the day before, day of and the day after each dose of PEMEtrexed (Higher or additional doses are permitted) (Self-administered at home)

Treatment Regimen – THOR – PEMEtrexed + CARBOplatin (NSCLC)

Establish primary solution 500 mL of: normal saline

Drug	Dose	CCMB Administration Guideline
PEMEtrexed + CARBOplatin (Cycles 1 to 4)		
aprepitant	125 mg	Orally 1 hour pre-chemotherapy
ondansetron	16 mg	Orally 30 minutes pre-chemotherapy
dexamethasone	4 mg	Orally 30 minutes pre-chemotherapy <i>*Nursing Alert: this dose is in addition to the 8 mg self-administered dose taken at home morning of Day 1</i>

PEMEtrexed	500 mg/m ²	IV in normal saline 100 mL over 10 minutes <i>*Nursing Alert: CARBOplatin starts at least 30 minutes after completion of PEMEtrexed infusion</i>
CARBOplatin	AUC 5 mg/mL.min; maximum dose 750 mg (see table below)	IV in D5W 250 mL over 30 minutes
vitamin B12	1000 mcg	Intramuscularly once Cycle 4
PEMEtrexed Maintenance (Cycle 1 and Onwards)		
PEMEtrexed	500 mg/m ²	IV in normal saline 100 mL over 10 minutes
vitamin B12	1000 mcg	Intramuscularly once every 9 weeks throughout treatment and for one additional dose upon discontinuation of PEMEtrexed <i>*Nursing Alert: vitamin B12 will be given on Day 1 of maintenance Cycles 3, 6, 9, 12, etc. (continued every 3 cycles) until PEMEtrexed is discontinued plus one additional dose</i> <i>*Alert: The last dose of vitamin B12 will be given either 3 weeks, 6 weeks or 9 weeks after the patient's last dose of PEMEtrexed, depending on when they received their last dose of vitamin B12</i>
All doses will be automatically rounded that fall within the DSG Approved Dose Bands. See THOR DSG – 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

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

Recommended Support Medications

Drug	Dose	CCMB Administration Guideline
PEMEtrexed + CARBOplatin (Cycles 1 to 4)		
aprepitant	80 mg	Orally once daily on Days 2 and 3
dexamethasone	8 mg	Orally once daily on Day 3 Note additional Pre-treatment Requirements for PEMEtrexed
metoclopramide	10 – 20 mg	Orally every 4 hours as needed for nausea and vomiting
PEMEtrexed Maintenance (Cycle 1 and Onwards)		
metoclopramide	10 – 20 mg	Orally every 4 hours as needed for nausea and vomiting

DISCHARGE INSTRUCTIONS

- Instruct patient to continue taking folic acid, dexamethasone and anti-emetic(s) at home
- vitamin B12 is part of this treatment regimen. Patient should notify clinic if they are receiving vitamin B12 for other indications
- Reinforce applicable safe handling precautions of medications, blood and body fluids for 48 hours after completion of chemotherapy

ADDITIONAL INFORMATION

- folic acid, vitamin B12 and dexamethasone are prescribed to decrease PEMEtrexed toxicity
- During PEMEtrexed + CARBOplatin cycles, dexamethasone is also prescribed post treatment for delayed nausea
- Non-Steroidal Anti-Inflammatory drugs (NSAIDs) may increase the toxicity of PEMEtrexed. Hold NSAIDs for 2 days before, the day of and for 2 days after PEMEtrexed
- Support protocol under **PEME Support (NSCLC)** in the “Lung Cancer” folder is to be used to order folic acid and the first and last dose of vitamin B12
- PEMEtrexed + CARBOplatin may be continued for up to 6 cycles at the physician’s discretion
- **Note:** Upon completion of 4 cycles of **LUNG – [PEMEtrexed + CARBO (NSCLC)]**, patients may be started on maintenance treatment with **LUNG – [PEMEtrexed (maint) (NSCLC)]**
 - **LUNG – [PEMEtrexed (maint) (NSCLC)]** should begin 21 days after Cycle 4, Day 1 of **LUNG – [PEMEtrexed + CARBO (NSCLC)]**
- CARBOplatin dose considerations:
 - CCMB Thoracic DSG uses **actual body weight** to calculate GFR
 - CCMB Thoracic DSG uses a maximum CARBOplatin dose of 750 mg for this regimen
 - If calculated CARBOplatin dose differs **more than 10%** from prescribed CARBOplatin dose, contact the prescriber

**CARBOplatin Dosing Calculations
per CCMB Thoracic DSG**

Calculation of CARBOplatin dose: (maximum 750 mg)

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

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

N = 1.23 in males
N = 1.04 in females

AUC (mg/mL.min) <hr style="width: 50%; margin: 0 auto;"/> 5	X	GFR + 25 (mL/min) <hr style="width: 50%; margin: 0 auto;"/> ______ + 25	=	Total Dose (mg) <hr style="width: 50%; margin: 0 auto;"/>
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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 equations above may not be appropriate for some patient populations (for example, acute renal failure)