

BC Cancer Protocol Summary for Treatment of Locally Advanced Non-Small Cell Lung Cancer Using Alternative Dosing of CISplatin and Etoposide with Radiation Therapy

Protocol Code

LULAPE2RT

Tumour Group

Lung

Contact Physician

Dr. Christopher Lee

ELIGIBILITY:

- Locally advanced non-small cell lung cancer
- ECOG performance status 0 or 1
- Suitable candidate for concurrent chemotherapy and thoracic irradiation (radiation dose at least 60 Gy)

EXCLUSIONS:

- ECOG performance status 2 or higher
- Weight loss greater than 5% in preceding 3 months

TESTS:

- Baseline: CBC & differential, platelets, creatinine, alkaline phosphatase, ALT, total bilirubin, LDH
- Before each cycle: CBC & differential, platelets, bilirubin, creatinine
- Before day 8 CISplatin: creatinine
- If clinically indicated: bilirubin

PREMEDICATIONS:

- Antiemetic protocol for highly emetogenic chemotherapy as long as CISplatin dose is equal to 50 mg or giving CARBOplatin (see protocol [SCNAUSEA](#)).
- hydrocortisone and diphenhydrAMINE for history of hypersensitivity to etoposide

TREATMENT:

Drug	Dose	BC Cancer Administration Guideline
(Drugs can be given in any sequence)		
CISplatin	50 mg/m ² /day on Day 1 and Day 8	IV in 500 mL NS with potassium chloride 20 mEq, magnesium sulfate 1 g and mannitol 30 g over 1 hour
etoposide	50 mg/m ² /day x 5 days (days 1 to 5)	IV in 250 to 500 mL NS over 45 min (use non-DEHP equipment with 0.2 micron in-line filter)

- Usual plan for radiotherapy to start with the first cycle of chemotherapy
- Repeat every 28 days x 2 cycles

- Prophylactic co-trimoxazole DS one tablet PO bid or levoFLOXacin 500 mg PO daily x 10 days beginning 7 days post-chemotherapy should be considered for patients judged to be at high risk of neutropenic fever

In cases of CISplatin toxicity or poorly functioning patients or Age greater than 75:

Drug	Dose	BC Cancer Administration Guidelines
CARBOplatin	AUC 5 DAY 1 only Dose = AUC x (GFR* +25)	IV in 100 to 250 mL NS over 30 minutes.

*GFR preferably from nuclear renogram, if not possible use:

$$\text{GFR} = \frac{N \times (140 - \text{age in years}) \times \text{wt (kg)}}{\text{serum creatinine (micromol/L)}} \quad N = 1.04 \text{ (women) or } 1.23 \text{ (men)}$$

The estimated GFR 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.

DOSE MODIFICATIONS:

1. Hematology: for etoposide

ANC (X 10 ⁹ /L)		Platelets (x 10 ⁹ /L)	Dose
greater than or equal to 1.5	and	greater than or equal to 100	100%
1.0 to less than 1.5	or	75 to less than 100	75%
less than 1.0	or	less than 75	Delay

2. Hepatic dysfunction: for etoposide

Bilirubin (micromol/L)	Dose	
less than 25	100%	50 mg/m ² /day x 3 days
25-50	50%	25 mg/m ² /day x 3 days
51-85	25%	12.5 mg/m ² /day x 3 days
greater than 85	Delay	

3. Renal dysfunction:

For CISplatin

Calculated Cr Clearance (mL/min)	Dose
greater than or equal to 60	100%
45 to less than 60	80% CISplatin or go to CARBOplatin option (if available)
less than 45	Hold CISplatin or delay with additional IV fluids or go to CARBOplatin option (if available)

For etoposide

Initial dose modification to 75% should be considered if creatinine clearance is less than 30 mL/min. Subsequent dosing should be based on patient tolerance and clinical effect.

PRECAUTIONS:

1. **Hypersensitivity:** Monitor infusion of etoposide for the first 15 minutes for signs of hypotension. Hypersensitivity reactions have also been reported for CISplatin. Refer to BC Cancer Hypersensitivity Guidelines.
2. **Extravasation:** etoposide causes irritation if extravasated. Refer to BC Cancer Extravasation Guidelines.
3. **Neutropenia:** Fever or other evidence of infection must be assessed promptly and treated aggressively.
4. **Renal Toxicity:** Nephrotoxicity is common with CISplatin. Encourage oral hydration. Avoid nephrotoxic drugs such as aminoglycoside antibiotics.

Contact Dr. Christopher Lee or tumour group delegate at (604) 930-2098 or 1-800-523-2885 with any problems or questions regarding this treatment program.

REFERENCES:

1. Albain KS, Swann RS, Rusch VR, et al. Phase III study of concurrent chemotherapy and radiotherapy (CT/RT) vs CT/RT followed by surgical resection for stage IIIA(pN2) non-small cell lung cancer (NSCLC): Outcomes update of North American Intergroup 0139 (RTOG 9309). J Clin Oncol (Meeting Abstracts) 2005;23(16 suppl):7014.
2. Hanna N, Neubauer M, Yiannoutsos C, et al. Phase III study of cisplatin, etoposide, and concurrent chest radiation with or without consolidation docetaxel in patients with inoperable stage III non-small-cell lung cancer: The Hoosier Oncology Group and U.S. Oncology. J Clin Oncol 2008;26(35):5755-60.