# BC Cancer Protocol Summary for Treatment of Extensive Stage Small Cell Lung Cancer (SCLC) with Platinum and Oral Etoposide

| | |
|---|---|
| ***Protocol Code*** | *LUSCPEPO* |
| ***Tumour Group*** | *Lung* |
| ***Contact Physician*** | *Dr. Cheryl Ho* |

## ELIGIBILITY:

Patients must have:
- Extensive stage small cell lung cancer (SCLC)

Patients should have:
- ECOG performance status 0 to 3

Note:
- The intravenous formulation of etoposide should remain the preferred treatment option for the majority of patients as oral etoposide bioavailability is variable.
- For inpatients, use the intravenous formulation (See protocol LUSCPE).

## TESTS:

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

## PREMEDICATIONS:

- Antiemetic protocol for highly emetogenic chemotherapy (see protocol SCNAUSEA)

## TREATMENT:

| Drug | Dose | BC Cancer Administration Guideline |
|---|---|---|
| CISplatin | 75 mg/m$^2$ on Day 1 only | Prehydrate with NS 1000 mL over 1 hour, then give CISplatin IV in NS 500 mL with potassium chloride 20 mEq, magnesium sulfate 1 g, mannitol 30 g over 1 hour |
| etoposide* | 200 mg/m$^2$/day on Days 1 to 3 | PO |

* Etoposide is available as 50 mg capsules. Refer to Oral Etoposide Dispensing Table below.

**Oral Etoposide Dispensing Table:**

| Daily Dose (mg) | Dispense As: | |
|---|---|---|
| | Morning Dose (mg) | Evening Dose (mg) |
| 100 | 100 | N/A |
| 150 | 150 | N/A |
| 200 | 200 | N/A |
| | | |
| 250 | 150 | 100 |
| 300 | 150 | 150 |
| 350 | 200 | 150 |
| 400 | 200 | 200 |
| 450 | 250 | 200 |
| 500 | 250 | 250 |
| 550 | 300 | 250 |
| 600 | 300 | 300 |

**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<br>Dose = AUC x (GFR* +25) | IV in 100 to 250 mL NS over 30 minutes |

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

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

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.

- **Repeat every 21 days x 4 to 6 cycles**

**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 | 50% |
| less than 1.0 | or | less than 75 | **Delay** |

2. **Hepatic dysfunction:** for etoposide

| Bilirubin (micromol/L) | Dose |
|---|---|
| less than 25 | 100% |
| 25 to 50 | 50% |
| 51 to 85 | 25% |
| 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 |
| less than 45 | Hold CISplatin or delay with additional IV fluids or go to CARBOplatin option |

For etoposide

| Calculated Cr Clearance (mL/min) | Dose |
|---|---|
| Greater than or equal to 30 | 100% |
| Less than 30 | 75%* |

*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:** Hypersensitivity reactions are very rare with oral etoposide capsules, and have been reported for CISplatin. Refer to BC Cancer Hypersensitivity Guidelines.
2. **Gastrointestinal** side effects occur at a slightly higher incidence with oral etoposide administration compared to IV administration.
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. Cheryl Ho or tumour group delegate at (604) 930-2098 or 1-800-523-2885 with any problems or questions regarding this treatment program.**

**REFERENCES:**


1. Evans WK, Shepherd FA, Feld R, et al. VP-16 and cisplatin as first-line therapy for small-cell lung cancer. J Clin Oncol 1985; 3(11):1471-7.
2. Boni C, Cocconi G, Bisagni G, et al. Cisplatin and etoposide (VP-16) as a single regimen for small cell lung cancer. A phase II trial. Cancer 1989; 63(4):638-42.
3. Okamoto H, Watanabe K, Nishiwaki Y, et al. Phase II Study of Area Under the Plasma-Concentration-Versus-Time Curve-Based Carboplatin Plus Standard-Dose Intravenous Etoposide in Elderly Patients With Small-Cell Lung Cancer. J Clin Oncol 1999; 17(11):3540-5.
4. Hande K, Messenger M, Wagner J, et al. Inter- and intrapatient variability in etoposide kinetics with oral and intravenous drug administration. Clin Cancer Res. 1999 Oct;5(10):2742-7.
5. Johnson DH, Ruckdeschel JC, Keller JH, et al. A randomized trial to compare intravenous and oral etoposide in combination with cisplatin for the treatment of small cell lung cancer. Cancer. 1991 Jan 1;67(1 Suppl):245-9.
6. Mellemgaard A, Hersby D, Chaudhary F, et al. Retrospective analysis to compare the efficacy of oral (O) vs. intravenous (IV) etoposide given in combination with carboplatin for small cell lung cancer (SCLC), extensive disease (ED). J Clin Oncol. 35:e20020.

7. Karachiwala H, Tilley D, Abdel-Rahman O, et al. Comparison of oral versus intravenous etoposide in the management of small-cell lung cancer; A real-world, population-based study. Clin Respir J. 2021 Jan;15(1):36-41.
8. Evans WK, Radwi A, Tomiak E, et al. Oral etoposide and carboplatin. Effective therapy for elderly patients with small cell lung cancer. Am J Clin Oncol. 1995 Apr;18(2):149-55.
9. Eek D, Krohe M, Mazar I, et al. Patient-reported preferences for oral versus intravenous administration for the treatment of cancer: a review of the literature. Patient Prefer Adherence. 2016 Aug 24;10:1609-21.