

CANCER TREATMENT REGIMENS

Lung Cancer

The selection, dosing, and administration of anticancer agents and the management of associated toxicities are complex. Drug dose modifications and schedule and initiation of supportive care interventions are often necessary because of expected toxicities and because of individual patient variability, prior treatment, and comorbidities. Thus, the optimal delivery of anticancer agents requires a healthcare delivery team experienced in the use of such agents and the management of associated toxicities in patients with cancer. These cancer treatment regimens may include both FDA-approved and unapproved uses/regimens and are provided as references only to the latest treatment strategies. Clinicians must choose and verify treatment options based on the individual patient.

NOTE: Grey shaded boxes contain updated regimens.

LUNG CANCER (Part 1 of 4)

General treatment notes for NSCLC:

- Regarding concurrent chemotherapy and radiotherapy, data support full-dose cisplatin over carboplatin-based regimens; carboplatin regimens have not been adequately tested.¹
- Principles for treating advanced disease:¹
 - » Platinum-based chemotherapy prolongs survival, improves symptom control, and yields superior quality of life compared with best supportive care.
 - » No specific platinum-based cytotoxic combination is clearly superior to another.
 - » Patients with performance statuses of 3 or 4, of any age, do not benefit from cytotoxic treatment, except erlotinib for epidermal growth factor receptor (EGFR) mutation-positive patients.

REGIMEN	DOSING
Non-Small Cell Lung Cancer (NSCLC)	
Chemotherapy for Adjuvant Therapy	
Cisplatin (Platinol; CDDP) + vinorelbine (Navelbine) ¹⁻⁴	Days 1 and 8: Cisplatin 50mg/m ² IV, plus Days 1, 8, 15 and 22: Vinorelbine 25mg/m ² IV. Repeat cycle every 4 weeks for 4 cycles.OR..... Day 1: Cisplatin 100mg/m ² IV, plus Days 1, 8, 15 and 22: Vinorelbine 30mg/m ² IV. Repeat cycle every 4 weeks for 4 cycles.
Cisplatin + etoposide (Toposar, VePesid, Etopophos; VP-16) ^{1,3}	Day 1: Cisplatin 100mg/m ² IV, plus Days 1-3: Etoposide 100mg/m ² IV. Repeat cycle every 4 weeks for 4 cycles.
Cisplatin + vinblastine (Velban) ³	Days 1: Cisplatin 80mg/m ² IV. Repeat cycle every 3 weeks for 4 cycles. Days 1, 8, 15, 22 and 29: Vinblastine 4mg/m ² IV, then every 2 weeks after Day 43 until last cisplatin administration.
Cisplatin + gemcitabine (Gemzar) ¹	Day 1: Cisplatin 75mg/m ² IV, plus Days 1 and 8: Gemcitabine 1,250mg/m ² IV. Repeat cycle every 3 weeks.
Cisplatin + docetaxel (Taxotere) ^{1,5}	Day 1: Docetaxel 75mg/m ² IV + cisplatin 75mg/m ² IV. Repeat cycle every 3 weeks.
Cisplatin + pemetrexed (Alimta) ¹	Day 1: Cisplatin 75mg/m ² IV + pemetrexed 500mg/m ² IV. Repeat cycle every 3 weeks for 4 cycles. (For adenocarcinoma and large cell carcinoma and NSCLC NOS without specific histologic subtype)
Paclitaxel (Taxol) + carboplatin (Paraplatin) ⁶	Day 1: Paclitaxel 200mg/m ² IV + carboplatin AUC=6mg/mL/min IV. Repeat cycle every 3 weeks for 4 cycles.
Concurrent Chemotherapy and Radiotherapy (RT)	
Cisplatin + etoposide ^{1,7}	Days 1, 8, 29 and 36: Cisplatin 50mg/m ² IV, plus Days 1-5 and 29-33: Etoposide 50mg/m ² IV, plus Concurrent thoracic RT 1.8Gy/day for 5 days/week (total dose, 61Gy); preferred regimen.
Cisplatin + vinblastine ^{1,8}	Days 1 and 29: Cisplatin 100mg/m ² IV, plus Days 1, 8, 15, 22 and 29: Vinblastine 5mg/m ² IV. Concurrent thoracic RT (total dose, 60Gy); preferred regimen.
Paclitaxel + carboplatin ⁹	Day 1: Paclitaxel 45mg/m ² IV + carboplatin AUC=2mg/mL/min. Concurrent thoracic RT 63Gy/7 wks/34 fractions. Repeat chemotherapy cycle 3-4 weeks following completion of RT for a total of 2 courses.

continued

LUNG CANCER (Part 2 of 4)

REGIMEN	DOSING
Concurrent Chemotherapy and Radiotherapy Followed by Chemotherapy	
Cisplatin + etoposide + docetaxel ^{7,10}	Days 1, 8, 29 and 36: Cisplatin 50mg/m ² IV. Days 1–5 and 29–33: Etoposide 50mg/m ² IV. Concurrent thoracic RT (total dose, 61Gy) followed by cisplatin 50mg/m ² IV + etoposide 50mg/m ² IV for 2 additional cycles; or followed by docetaxel started 4–6 weeks after chemoradiation at an initial dose of 75mg/m ² IV. Repeat cycle every 3 weeks, may increase to docetaxel 100mg/m ² if no toxicity.
Paclitaxel + carboplatin ¹	Day 1: Paclitaxel 45–50mg/m ² IV + carboplatin AUC=2mg/mL/min IV. Concurrent thoracic RT 63Gy followed by 2 cycles of paclitaxel 200mg/m ² IV + carboplatin AUC=6mg/mL/min.
Sequential Chemotherapy and Radiotherapy	
CDDP + vinblastine ⁸	Days 1 and 29: Cisplatin 100mg/m ² IV. Days 1, 8, 15, 22 and 29: Vinblastine 5mg/m ² IV followed by RT with 60Gy in 30 fractions beginning on Day 50.
Paclitaxel + carboplatin ^{1,10}	Day 1: Paclitaxel 200mg/m ² IV + carboplatin AUC=6mg/mL/min IV. Repeat cycle every 3 weeks; 2 cycles, followed by thoracic RT 63Gy beginning on Day 42.
Systemic Therapy for Advanced Disease—First-Line	
Bevacizumab (Avastin) + carboplatin and paclitaxel ¹¹	Bevacizumab 15mg/kg IV every 3 weeks with carboplatin/paclitaxel. Administer bevacizumab until disease progression.
Cetuximab (Erbix) + cisplatin and vinorelbine ¹²	Day 1: Cetuximab 400mg/m ² IV + cisplatin 80mg/m ² IV, plus Days 1 and 8: Vinorelbine 25mg/m ² IV, plus Day 8: Cetuximab 250mg/m ² IV once weekly. Repeat cycle every 3 weeks for 6 cycles. Indicated in advanced NSCLC
Erlotinib (Tarceva) ^{1,13,14}	Day 1: Erlotinib 150mg orally once daily; following 4 cycles of platinum-based chemotherapy. Indicated for EGFR mutation-positive patients and may be considered as an option for patients who test positive for an EGFR mutation.
Pemetrexed (Alimta) + cisplatin ¹⁵	Day 1: Pemetrexed 500mg/m ² IV + cisplatin 75mg/m ² IV. Repeat cycle every 3 weeks.
Pemetrexed ¹⁵	Day 1: Pemetrexed 500mg/m ² IV. Repeat cycle every 3 weeks.
Gefitinib (Iressa) ^{1,16,17}	Day 1: Gefitinib 250mg orally once daily. May be considered as an option for patients who test positive for an EGFR mutation.
Crizotinib (Xalkori) ¹⁸	Crizotinib 250mg orally twice daily. May reduce to 200mg twice daily not tolerated or toxicity occurs. If further reduction is needed, reduce to 250mg once daily.
Systemic Therapy for Advanced Disease—Second-Line	
Docetaxel or Pemetrexed or Erlotinib ¹⁹⁻²¹ *In patients who have experienced disease progression either during or after first-line therapy, single-agent docetaxel, pemetrexed, or erlotinib are established second-line agents.	Day 1: Docetaxel 75mg/m ² IV. Repeat cycle every 3 weeks. Docetaxel has proved superior to BSC, vinorelbine, or ifosfamide with improved survival and quality of life.OR..... Day 1: Pemetrexed 500mg/m ² IV. Repeat cycle every 3 weeks. Pemetrexed has been shown to be superior to docetaxel with less toxicity in patients with adenocarcinoma and large cell carcinoma (non-squamous histology).OR..... Day 1: Erlotinib 150mg orally once daily. Erlotinib has proved superior to BSC with significantly improved survival and delayed time to symptom deterioration in NSCLC patients previously treated with chemotherapy.

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LUNG CANCER (Part 3 of 4)

REGIMEN	DOSING
Systemic Therapy for Advanced Disease—Third Line	
Erlotinib ²¹	<p>Day 1: Erlotinib 150mg orally once daily.</p> <p>Erlotinib has proved superior to BSC with significantly improved survival and delayed time to symptom deterioration in patients who previously failed first- and second-line chemotherapy.</p>
General treatment note for SCLC: Because of their inability to augment or enhance standard platinum-based chemotherapies in the setting of clinical trials, to date, no targeted therapy has been approved for use in the treatment of patients with SCLC, including bevacizumab, thalidomide, gefitinib, sorafenib, vandetanib, tipifarnib, and imatinib. ²²	
Small Cell Lung Cancer (SCLC)	
Platinum-Based Chemotherapies¹	
Cisplatin + etoposide + irinotecan (Camptosar; CPT-11) ²³	<p><u>Cycle 1</u></p> <p>Day 1: Cisplatin 80mg/m² IV, plus</p> <p>Days 1-3: Etoposide 100mg/m² IV; maximum 4-6 cycles.</p> <p>Beginning on Day 2, RT twice daily (1.5Gy per fraction, a total dose of 45Gy).</p> <p><u>Cycles 2-4</u></p> <p>Day 1: Cisplatin 60mg/m², plus</p> <p>Days 1, 8 and 15: Irinotecan 60mg/m².</p> <p>Repeat cycle every 4 weeks.</p>
Cisplatin + etoposide ²⁴	<p>Day 1: Cisplatin 60mg/m² IV, plus</p> <p>Days 1-3: Etoposide 120mg/m² IV.</p> <p>Repeat cycle every 3 weeks for at least 4 cycles.</p>
Carboplatin (Paraplatin) + irinotecan ²⁵	<p>Day 1: Carboplatin AUC=5mg/mL/min IV, plus</p> <p>Days 1, 8 and 15: Irinotecan 50mg/m² IV.</p> <p>Repeat cycle every 4 weeks.</p>
Carboplatin + etoposide ²⁶	<p>Day 1: Carboplatin AUC=5mg/mL/min IV, plus</p> <p>Days 1-3: Etoposide 140mg/m² IV.</p> <p>Repeat cycle every 4 weeks.</p>
Carboplatin + topotecan (Hycamtin) ²⁷	<p>Day 1: Carboplatin AUC=5mg/mL/min IV, plus</p> <p>Days 1 and 8: Topotecan 4mg/m² IV.</p> <p>Repeat cycle every 3 weeks for maximum 6 cycles.</p>
Platinum-Based Targeted Therapies	
Bevacizumab* + carboplatin + irinotecan ²⁷	<p>Day 1: Carboplatin AUC=4mg/mL/min IV, plus</p> <p>Days 1 and 15: Bevacizumab 10mg/kg IV (for Cycle 1 only).</p> <p>Days 1, 8 and 15: Irinotecan 60mg/m² IV.</p> <p>Repeat cycle every 4 weeks for maximum 6 cycles.</p>
Bevacizumab* + cisplatin + etoposide ²⁸	<p>Day 1: Cisplatin 60mg/m² IV, plus</p> <p>Days 1-3: Etoposide 120mg/m² IV.</p> <p>Repeat cycle every 3 weeks for maximum 4 cycles.</p> <p>Following completion of chemotherapy</p> <p>Bevacizumab 15mg/kg IV until disease progression for total of 1 year.</p>
*Use with extreme caution due to reports of life-threatening tracheo-esophageal fistula that developed in some patients in clinical trials who received chemotherapy, RT and bevacizumab; bevacizumab is indicated only for NSCLC, not small cell lung cancer. ¹¹	
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LUNG CANCER (Part 4 of 4)

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