

Small Cell Lung Cancer Radiotherapy Decision Tree Malthus : Updated March 2013

Small Cell Lung Cancer [SCL]	Limited Stage 10%	'T1-4, N0-3, M0' Good PS	Concurrent chemotherapy and Thoracic Radiotherapy [TRT] ^{7, 8, 9, 10} Consider CONVERT ¹¹ trial 66 Gy /33# over 6.5/52 vs 45 Gy/30#* over 3/52 50 in 25 # concurrent 45 Gy/ 30#, 1.5 Gy BD in 3/52 ^{1, 4, 6, *} 40 Gy ¹³ /15 in 3/52 after chemo. 55 Gy/ 25#, 5/52 after chemo. Sequential treatment for anyone who can't tolerate concurrent	CT/RT if Partial Response or Complete Response ⁵ then PCI 25 Gy/10# ^{2*} PCI [Prophylactic Cranial Irradiation] ⁵ Probably not for over 70's 25% estimate	
		POOR PS	trial of chemo and then RAD OR pall RADIOTHERAPY 20/5# or single 10Gy	No PCI If poor response, development metastatic disease consider further chemotherapy - otherwise see next node 75% estimate	
		Extensive Stage 90%	'T1-4, N0-3, M1a/b'	Chemotherapy	If any response PCI 20 Gy/5# ^{3*} , 25 Gy/10# ³ if CR to chemo ⁵ Consider thoracic RT 40 Gy/15# over 3/52, 30 Gy/10#, 20 Gy/5# if symptomatic REST ¹⁴ trial 30 Gy in 10# who respond well to chemotherapy may be asymptomatic. If present with cerebral metastases may consider WBRT at onset 20 Gy/5# or Chemotherapy followed by WBRT [EORTC] or 12 Gy/2#
	NOT FIT 20%	PALL CARE AND PALL radiotherapy 5#	Poor response No PCI	Radiotherapy Symptomatic metastases If unresponsive to chemo or Spinal cord compression 20 Gy/5#*, 12 Gy/2# bone metastases 8 /1#Gy* Metastatic disease no RT No focal symptoms	

Small Cell Lung Cancer Radiotherapy Decision Tree Malthus : Updated March 2013

--	--	--	--	--	--

Clinical estimates are in Red

Limited stage. Good PS and no bulk get chemoradiotherapy limited by OARs and facilitated by IMRT Practice change

References

1. Turrisi AT 3rd, Kim K, Blum R, Sause WT, Livingston RB, Komaki R, Wagner H, Aisner S, Johnson DH. Twice-daily compared with once-daily thoracic radiotherapy in limited small-cell lung cancer treated concurrently with cisplatin and etoposide. *N Engl J Med*. 1999 Jan 28;340(4):265-71.
2. Le Péchoux C, Dunant A, Senan S, Wolfson A, Quoix E, Faivre-Finn C, Ciuleanu T, Arriagada R, Jones R, Wanders R, Lerouge D, Laplanche A; Prophylactic Cranial Irradiation (PCI) Collaborative Group. Standard-dose versus higher-dose prophylactic cranial irradiation (PCI) in patients with limited-stage small-cell lung cancer in complete remission after chemotherapy and thoracic radiotherapy (PCI 99-01, EORTC 22003-08004, RTOG 0212, and IFCT 99-01): a randomised clinical trial. *Lancet Oncol*. 2009 May;10(5):467-74. Epub 2009 Apr 20.
3. Slotman B, Faivre-Finn C, Kramer G, Rankin E, Snee M, Hatton M, Postmus P, Collette L, Musat E, Senan S; EORTC Radiation Oncology Group and Lung Cancer Group. Prophylactic cranial irradiation in extensive small-cell lung cancer. *N Engl J Med*. 2007 Aug 16;357(7):664-72.
4. Brade AM, Tannock IF. Scheduling of radiation and chemotherapy for limited-stage small-cell lung cancer: repopulation as a cause of treatment failure? *J Clin Oncol*. 2006 Mar 1;24(7):1020-2.
5. Prophylactic Cranial Irradiation Overview Collaborative Group. Cranial irradiation for preventing brain metastases of small cell lung cancer in patients in complete remission. *Cochrane Database Syst Rev*. 2000;(4):CD002805.
6. Samson DJ, Seidenfeld J, Simon GR, Turrisi AT 3rd, Bonnell C, Ziegler KM, Aronson N; American College of Chest Physicians. Evidence for management of small cell lung cancer: ACCP evidence-based clinical practice guidelines (2nd edition). *Chest*. 2007 Sep;132(3 Suppl):314S-323S.
7. Pijls-Johannesma MC, De Ruyscher D, Lambin P, Rutten I, Vansteenkiste JF. Early versus late chest radiotherapy for limited stage small cell lung cancer. *Cochrane Database Syst Rev*. 2005 Jan 25;(1):CD004700.
8. Pignon JP, Arriagada R, Ihde DC, Johnson DH, Perry MC, Souhami RL, Brodin O, Joss RA, Kies MS, Lebeau B, et al. A meta-analysis of thoracic radiotherapy for small-cell lung cancer. *N Engl J Med*. 1992 Dec 3;327(23):1618-24.
9. Spiro SG, James LE, Rudd RM, Trask CW, Tobias JS, Snee M, Gilligan D, Murray PA, Ruiz de Elvira MC, O'Donnell KM, Gower NH, Harper PG, Hackshaw AK; London Lung Cancer Group. Early compared with late radiotherapy in combined modality treatment for limited disease small-cell lung cancer: a London Lung Cancer Group multicenter randomized clinical trial and meta-analysis. *J Clin Oncol*. 2006 Aug 20;24(24):3823-30.
10. De Ruyscher D, Pijls-Johannesma M, Bentzen SM, Minken A, Wanders R, Lutgens L, Hochstenbag M, Boersma L, Wouters B, Lammering G, Vansteenkiste J, Lambin P. Time between the first day of chemotherapy and the last day of chest radiation is the most important predictor of survival in limited-disease small-cell lung cancer. *J Clin Oncol*. 2006 Mar 1;24(7):1057-63.
11. Manchester Lung Cancer Group. CONVERT Concurrent ONce daily VErsus twice-daily RadioTherapy: A 2-arm randomised controlled trial of concurrent chemo-radiotherapy comparing twice-daily and once-daily radiotherapy scheduled in patients with limited stage small cell lung cancer (SCLC) and good performance status. CONVERT trial protocol: Version 3, 10 June 2008.
12. Thatcher N, Faivre-Finn C, Lorigan P. Management of small-cell lung cancer. *Ann Oncol*. 2005;16 Suppl 2:ii235-9.
13. Nevin Murray, Peter Coy, Joseph L. Pater, Ian Hodson, Andrew Arnold, Benny C. Zee, David Payne, Edmund C. Kostashuk, William K. Evans, Peter Dixon, Anna Sadura, Ronald Feld, Martin Levitt, Rafal Wierzbicki, Joseph Ayoub, Jean A. Maroun, and Kenneth S. Wilson for the National Cancer Institute of Canada Clinical Trials Group. Importance of Timing for Thoracic Irradiation in the Combined Modality Treatment of Limited-Stage Small-Cell Lung Cancer. *J Clin Oncol* 11:336-344

14. Dr Corinne Faivre-Finn. REST - Chest Irradiation in Extensive Disease Small Cell Lung Cancer. A Randomised Trial on Chest Irradiation in Extensive Disease Small Cell Lung Cancer (ED-SCLC). MREC N° 10/H1003/101

Guidelines

NCCN®. Practice Guidelines in Oncology – v.1.2010. Small Cell Lung Cancer.

The Diagnosis and Treatment of Lung Cancer. Methods, Evidence and Guidance. February 2005. Commissioned by the National Institute for Clinical Excellence. (*NICE draft 2010 - to be published 2011*)

Evidence for management of small cell lung cancer: ACCP evidence-based clinical practice guidelines (2nd edition). Chest. 2007 Sep;132(3 Suppl):314S-323S.

Sørensen M, Pijls-Johannesma M, Felip E; ESMO Guidelines Working Group. Small-cell lung cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2010 May;21 Suppl 5:v120-5.

Sørensen M, Felip E; ESMO Guidelines Working Group. Small-cell lung cancer: ESMO clinical recommendations for diagnosis, treatment and follow-up. Ann Oncol. 2008 May;19 Suppl 2:ii41-2.