

M. Caeiro, A. Gomez, J. Casal, R. Leiva, M. Lazaro, S. Vazquez, C. Pena, C. Grande, A. Carballo  
*Promoter Galician Group of Lung Cancer (GGCP 21/04), Spain*



**Introduction.** The NSCLC stage III, represents a third of cases. Combined Schemes of multimodal therapy, rates obtained of locoregional control are 40–50%. The brain is one of the causes of distant failure. Preliminary studies have shown the efficacy of PCI in reducing the risk of CNS metastases as a first failure. PROPOSAL: A pilot study phase II about PCI in stage III NSCLC with unfavorable histology, which have obtained clinical or pathological complete response after combined multimodal therapy. OBJECTIVES: To assess the rate of cerebral recurrence. Assess the late toxicity in long survivors, and analyze the impact of PCI on overall survival.

**Patients and methods.** Patients with stage III NSCLC, with unfavorable histology, which have been treated with RT/CT with/without surgery after clinical or pathological CR. Treatment plan: - PCI starts after thoracic surgery or after thoracic radiation and chemotherapy has finished and response has been assessed. The treatment is administered within 13 weeks from the primary treatment. - Cranial RT - Dose: 30 Gy/2 Gy/day/three weeks. A total of 28 patients have been enrolled between July 2004 and December 2012. Age: 61 (34–75), Gender: M (25%)/H (75%), Histology: Adenocarcinoma 13/28 (44%). Squamous G3 14/27 (51%), large cell undifferentiated carcinoma 1/27 (3.5%). Stage: IIIA: 16/27 (59%), IIIB: 11/27 (41%). A total of 6 patients refused PCI treatment and were analyzed for cerebral recurrence rate.

**Results.** Follow-up: 51 months. Survival: 14/28, (50%). Progression: SNC: 1/28 (3.58%). 96% Control (PCI Rejects: 2/6 (33%)). Chronic neurological toxicity: (1 pt. Hydrocephalus).

**Conclusions.** The PCI is a safe and effective technique in controlling CNS metastases in patients with advanced disease. The CNS-level control is 96%. Randomized studies are necessary to establish the definitive role of the PCI in the treatment of advanced NSCLC and unfavorable histology.

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#### Thoracic radiotherapy in small cell lung carcinoma with extensive disease

M. Caeiro, A. Gomez, G. Huidobro, A. Triñanes, M. Villanueva, L. Leon, M. Lazaro, A. Carballo, J. Firvida, E. Hernandez, S. Vazquez  
*Promoter Galician Group of Lung Cancer (GGCP 20/04), Spain*



**Introduction.** SCLC accounts for 20% of all lung cancers. At diagnosis, 60% are extensive disease outside the chest. Overall survival is ranging from six to 12 months, with overall responses between 70 and 85% with chemotherapy. 60% have loco-regional recurrence after response to chemotherapy.

**Proposal.** To analyze the value of consolidation thoracic radiotherapy (RTCT) and prophylactic cranial irradiation (PCI) in SCLC patients with extensive disease.

**Objectives.** To improve loco-regional control rate. Increase the progression-free interval. Maintain acceptable acute and chronic toxicity. Assess the impact on overall survival.

**Patients and methods.** RTCT similar in disease limited to the chest, PCI with similar characteristics. Palliative cranial irradiation: will be used next to 30 Gy/10 fractions. We present a series which includes 37 patients between 2004 and 2012: Age: median 63 years (39–80). Sex: female (4)/man (33). Initial location of metastases: pleural (3), lung (2), esophagus (1), cervical-supraclavicular (9 patients), bone (12), liver (6), pelvis (1), adrenal (5), retro-peritoneum (3), central nervous system (3), axilla (2), small bowel (1). **Results.** Responses 37/37 patients. RCC: 15/37 (40.5%), RPC: 22/37 (59.5%). Median follow-up: 48 months. Median survival: 15 months. Progression-free interval: 10.5 months. Alive: 10/37 (27%). VSE: 8, VCE: 2. 7/37 live more than 36 months, 4/37 live more than 24 months (long survivors). Exitus, 27/37 (73%). Disease progression by location (27/37): SNC 7/37 (19.5%): 5/6 no IPC (83%), 2/31 IPC (6.5%). Lung: 8/37 (21.6%), supraclavicular: 2/37 (5.4%), bone: 5/37 (13.5%), cervical: 1/30 (3.2%), liver: 7/37 (19.5%), adrenal: 5/37 (13.5%). There have been two events of pulmonary toxicity.

**Conclusions.** RTCT and PCI, is a safe and effective technique. The overall survival results are similar to the few publications in the literature. The control rate chest disease was 70%, the rate in the CNS control was 93% with PCI. Pulmonary toxicity was low but serious.

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#### Treatment-related acute esophagitis for patients with locoregionally advanced non-small cell lung cancer

D. Mosquera Castro<sup>1</sup>, A. Roselló Serrano<sup>1</sup>, D. Jurado Bruggeman<sup>2</sup>, E. Oliva Poch<sup>1</sup>, J. Castillo Martin<sup>1</sup>, L. Anglada Tort<sup>1</sup>



<sup>1</sup>Hospital Universitario Dr. Josep Trueta, Oncología Radioterápica, ICO, Girona, Spain

<sup>2</sup>Hospital Universitario Dr. Josep Trueta, Física Médica. ICO, Girona, Spain

**Introduction.** Acute esophagitis is a very common complication of radiotherapy in thoracic malignancies and may be a dose-limiting toxicity. The use of both concomitant chemotherapy and elective nodal irradiation seems to increase the incidence and severity of this toxicity. Objective. To evaluate the incidence and clinical/dosimetric risk factors for treatment-related acute esophagitis in patients with non-small cell lung cancer (NSCLC) treated with radiotherapy.