European Respiratory Society
Annual Congress 2012

Abstract Number: 3242

Publication Number: P4165

Abstract Group: 11.1. Lung Cancer

Keyword 1: Lung cancer / Oncology **Keyword 2:** Genetics **Keyword 3:** Cell biology

Title: Clinical implication of stem cell markers in N2 positive non-small cell lung cancer

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Body: Introduction: Non-small cell lung cancer (NSCLC) is one of the most commonly diagnosed malignancies and the leading cause of death worldwide. Caner stem cells (CSC) are proposed to be responsible for metastasis and chemoresistance. Material and method: 72 patients were diagnosed with N2 positive NSCLC. They underwent surgical resection from 2006 to 2007 in Asan Medical Center, Seoul, Korea. Immunohistochemical staining for CD133, CD44, CD24, CXCR4, Nanog, Oct4, ABCG2, E-cadherin, vimentin, and Ki-67 was performed. Result: Most frequently expressed CSC marker in primary tumor specimens of NSCLC was CXCR4 (92.2%), followed by CD44 (29.2%), CD24 (12.5%), and ABCG2 (9.7%). However, other markers such as CD133, Nanog, and Oct4 were not expressed. E-cadherin was expressed in 86.1% of primary tumor specimens, while vimentin was expressed in 20.8%. Cell proliferative marker, Ki-67, was expressed in 16.7% of primary tumor tissues. As for specimens of lymph nodes, most frequently expressed marker was CXCR4 (93.1%), followed by CD44 (15.2%), ABCG2 (12.5%), and CD24 (10%). In 85.1% of lymph node specimens, E-cadherin was positive. Vimentin was positive in 17.9%. Among the patients showing CD44 positivity in primary tumor specimens, 70% were negative for CD44 expression in lymph nodes. Survival analysis revealed that CD44 expression is a favorable prognostic factor for overall survival (p=0.024). Multivariate analysis using Cox-regression showed that NSCLC patients with CD44 positivity have trend towards increased overall survival. Conclusion: Various CSC markers are expressed in patients with NSCLC. Immunoreactivity for CD44 is a positive prognostic factor for survival in N2 positive NSCLC.