



The 10 best recent articles in the medical literature relating to lung cancer are reviewed here.

TEN BEST READINGS RELATING TO LUNG CANCER

Gerold Bepler, MD, PhD

From the Thoracic Oncology Program at the H. Lee Moffitt Cancer Center & Research Institute, Tampa, Florida.

D'Cunha J, Corfits AL, Herndon JE 2nd, et al. Molecular staging of lung cancer: real-time polymerase chain reaction estimation of lymph node micrometastatic tumor cell burden in stage I non-small cell lung cancer. Preliminary results of Cancer and Leukemia Group B Trial 9761. *J Thorac Cardiovasc Surg.* 2002;123:484-491.

Detection rates of occult metastases were similar for standard reverse-transcriptase polymerase chain reaction and quantitative reverse-transcriptase polymerase chain reaction at 38 (16.4%) and 59 (25.4%) of 232 lymph nodes, respectively.

Albanell J, Rojo F, Averbuch S, et al. Pharmacodynamic studies of the epidermal growth factor receptor inhibitor ZD1839 in skin from cancer patients: histopathologic and molecular consequences of receptor inhibition. *J Clin Oncol.* 2002;20:110-124.

ZD1839 inhibits EGFR activation and affects downstream receptor-dependent processes in vivo. These effects were profound at doses well below the one producing unacceptable toxicity, a finding that strongly supports pharmacodynamic assessments to select optimal doses instead of a maximum-tolerated dose for definitive efficacy and safety trials.

Beer DG, Kardia SL, Huang CC, et al. Gene-expression profiles predict survival of patients with lung adenocarcinoma. *Nat Med.* 2002;8:816-824.

The identification of a set of genes that predict survival in early-stage lung adenocarcinoma allows

delineation of a high-risk group that may benefit from adjuvant therapy.

Green DR, Evan GI. A matter of life and death. *Cancer Cell.* 2002;1:19-30.

The authors propose that deregulation of proliferation, together with a reduction in apoptosis, creates a platform that is both necessary and can be sufficient for cancer. The secondary traits of diverse neoplasms are a consequence of cell proliferation, tissue expansion, and other outcomes of this platform.

Gautam A, Li ZR, Bepler G. RRM1-induced metastasis suppression through PTEN-regulated pathways. *Oncogene.* 2003;22:2135-2142.

Overexpression of RRM1 in human and mouse lung cancer cell lines induced PTEN expression, reduced phosphorylation of focal adhesion kinase (FAK), suppressed migration, invasion, and metastasis formation, and increased survival in an animal model. Increased PTEN expression was required for the RRM1-induced suppression of cell motility and FAK phosphorylation. Thus, RRM1 functions as a metastasis suppressor gene through induction of PTEN expression.

Patz EF Jr, Goodman PC, Bepler G. Screening for lung cancer. *N Engl J Med.* 2000;343:1627-1633.

Although there is public and political pressure, based only on low-dose CT prevalence-screening data, to change clinical practice rapidly and to offer mass lung-can-

cer screening, there should be no compromise or shortcuts in the rigorous scientific process required to determine whether this practice is justified. Too often, presumed solutions have prematurely become standard medical care before the appropriate studies have been completed. We recommend that well-designed studies be conducted, completed, analyzed, and validated before a mass screening program is implemented.

Reid ME, Duffield-Lillico AJ, Garland L, et al. Selenium supplementation and lung cancer incidence: an update of the nutritional prevention of cancer trial. *Cancer Epidemiol Biomarkers Prev.* 2002; 11:1285-1291.

The current reanalysis indicates that selenium supplementation did not significantly decrease lung cancer incidence in the full population, but a significant decrease among individuals with low baseline selenium concentrations was observed.

Keller SM, Adak S, Wagner H, et al. A randomized trial of postoperative adjuvant therapy in patients with completely resected stage II or IIIA non-small-cell lung cancer. Eastern Cooperative Oncology Group. *N Engl J Med.* 2000;343: 1217-1222.

Compared with radiotherapy alone, adjuvant radiotherapy and chemotherapy with cisplatin and etoposide does not decrease the risk of intrathoracic recurrence or prolong survival in patients with completely resected stage II or IIIA non-small-cell lung cancer.

Schiller JH, Harrington D, Belani CP, et al. Comparison of four

chemotherapy regimens for advanced non-small-cell lung cancer. *N Engl J Med.* 2002;346:92-98.

None of four chemotherapy regimens offered a significant advantage over the others in the treatment of advanced non-small-cell lung cancer.

Fukuoka M, Yano S, Giaccone G, et al. Multi-institutional randomized phase II trial of gefitinib for previously treated patients with advanced non-small-cell lung cancer. *J Clin Oncol.* 2003;21:2237-2246.

Gefitinib showed clinically meaningful antitumor activity and provided symptom relief as second- and third-line treatment in advanced NSCLC. At 250 mg/d, gefitinib had a favorable adverse event profile.