

## New advances in management of lung cancer with Anti-VEGF and EGFR-TKI

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Lung cancer is the leading cause of cancer related mortality in the United States. Patients treated with adjuvant chemotherapy have a 5 year survival of 25-70% depending on stage while those with advanced disease have a median survival of approximately 10 months when treated with standard platinum based therapy. Improvements in our understanding of cancer biology have led to the development of novel agents that more precisely affect the target of interest allowing for a more rationale approach to clinical trial design. Angiogenesis, the growth of new vessels from pre-existing vessels is a fundamental step in tumor growth and progression. Inhibition of tumor-related angiogenesis has become an attractive target for anticancer therapy. Bevacizumab, a monoclonal antibody against vascular endothelial growth factor (VEGF), is the most studied anti-angiogenic agent in patients with non-small cell lung cancer (NSCLC). There was an improvement in overall survival when bevacizumab was combined with paclitaxel and carboplatin in patients with advanced NSCLC that was not seen when bevacizumab was combined with cisplatin and gemcitabine. Small molecule inhibitors targeting both the VEGF receptor (VEGFR) and the tyrosine kinase receptor have also shown promise when combined with standard chemotherapy but their role in the treatment of patients with NSCLC remains to be determined. Data have also demonstrated the significant therapeutic involvement of the EGFR pathway in tumorigenesis. Erlotinib has shown a survival advantage over placebo in patients previously treated with one or two prior chemotherapy regimens. Recent studies have also shown that combining agents from these two pathways are feasible with promising activity.