EGFR targeted therapy resistance: current status, challenges, and future outlook

Lung cancer is the leading cause of cancer mortality worldwide. Recent progress has improved outcomes for many lung cancer patients. In particular, activating genetic alterations in the oncogenic driver genes such as the epidermal growth factor receptor (EGFR) are now successfully targeted with agents such as the EGFR tyrosine kinase inhibitor osimertinib. Despite progress, drug resistance remains a barrier to complete and long-term tumor responses. Indeed, most patients do not survive with EGFR mutant lung cancer as a chronic disease and instead succumb to the disease within a few years due to the emergence of resistance.

This volume focuses on the problem of drug resistance through the prism of EGFR mutant lung cancer. The sections focus on both on-target and off-target mechanisms of resistance to EGFR inhibitors in clinical use. There are discussions of inter- and intra-tumor heterogeneity that is a key challenge to further progress in transforming lung cancer into a chronic disease for all patients.

Solutions to the challenges of drug resistance are discussed. Improved molecular diagnostics and various therapeutic strategies tailored to the molecular biology of drug resistance in individual patients and patient subsets are explored.

This volume promises to enhance the understanding of continued research to further improve outcomes for EGFR mutant lung cancer patients through mechanism-based investigation and clinical trials.

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