

**SURGERY. THE GENE PROFILE OF NON-SMALL CELL LUNG CANCER AND THE INVASION OF MEDIASTINAL GANGLIA**

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**Abstract**

Standard cytotoxic chemotherapy is effective for certain type of cancer; however, as far as many other types are concerned, the available treatments only offer a limited survival benefit. Lung cancer represents one of these types of cancer. The development of specific therapies is the greatest promise for the successful treatment of this disease; nevertheless, an oriented approach depends on the understanding of the tumor cells genome. The exon sequencing of a large number of lung cancer samples has provided an initial insight of the somatic mutation profile of these tumors. These studies have confirmed the high frequency of TP53 and KRAS mutations in lung cancer. They have discovered mutational inactivation in some suppressor genes of known tumors that have not been previously associated with lung cancer. In addition, they have identified oncogene mutations of EGFR, which has led to the first targeted therapy in pulmonary adenocarcinoma. There are other oncogene candidates awaiting for functional validation. It is expected for the future sequencing of the entire exome and of the entire genome of lung cancer to reveal a more thorough view of somatic mutations that can be exploited for therapeutical purposes.

**Key words:** lung cancer, EGFR, cancer sequencing, targeted therapy

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