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Transarterial infusion chemotherapy for non-small cell lung cancer

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Transarterial infusion chemotherapy is considered to be a cancer treatment option, as a tumor reduction and minimal adverse effects are expected with direct infusion of high-density chemotherapeutics into the tumor. However, its effectiveness for lung cancer has not been confirmed and severe adverse effects have been reported.

One reason for a poor response to transarterial infusion is technical difficulty, which is related to the bronchial arteries that are the main feeders of lung tumors. The numbers and branching patterns of these arteries differ among patients and non-bronchial arteries can also sometimes serve as feeding arteries. Furthermore, high dose chemotherapeutic agents ranging from half to the equivalent dosages of those used in systemic chemotherapy had been employed in the previous series. The risks of adverse phenomena increase with infusion of larger doses into a single artery.

We have performed transarterial infusion chemotherapy for non-small cell lung cancer (NSCLC) patients contraindicated for the standard therapies, based on the concept that the precise detection of the feeding arteries is a prerequisite and local serious adverse effects could be avoided with low-dose chemotherapeutic agents. Because our preliminary results was promising, we conducted the prospective study investigated the effect of transarterial infusion chemotherapy on advanced NSCLC (stage III or IV or recurrent disease without distant metastases outside the thorax) in patients who were contraindicated for standard chemotherapy or chemoradiotherapy.

This presentation will address the details of our method and results of our studies. We also refer to a perspective and limitations of this method.

Biography

Masanori Nakanishi has engaged in both clinical practice and clinical research of respiratory medicine and lung cancer for twenty years, during which he authored peer-reviewed original articles in primary care for respiratory medicine, imaging diagnosis for respiratory infection or interstitial lung diseases and transarterial infusion chemotherapy for lung cancer. He has authored three articles in transarterial infusion chemotherapy for non-small cell lung cancer.

Exploring the response of *BRAF* or *PIK3CA* mutated cancers to pathway-targeted inhibition using mouse models

Martin McMahon and Efim Guzik
University of California, USA

This lecture will address the utility of genetically engineered (GEM) and patient-derived mouse xenograft (PDX) models of cancer to explore mechanisms of oncogene-tumor suppressor cooperation in cancer initiation, progression and therapy. The lecture will emphasize the importance of the quality and quantity of signal pathway activation in sustaining cancer cell proliferation and how such phenomenon may be utilized to prevent the onset of drug resistant disease.

Biography

Martin McMahon research program focuses on the mechanisms underlying the development and treatment of metastatic melanoma, lung and thyroid cancer. Although these malignancies are derived from distinct cell types, they share a striking number of common genetic alterations especially activating mutations in *KRAS, BRAF or PIK3CA*. To do this, his laboratory works with cultured human cancer-derived cells and with genetically engineered mouse models of human cancer. He has served on the editorial boards for the *Molecular & Cellular Biology* and as a Senior Editor of *Molecular Cancer Research*. He is the Assistant Director for Professional Education and Co-Leader of the Developmental Therapeutics Program at the U.C. San Francisco, Helen Diller Family Comprehensive Cancer Center. He is also the President-Elect of the Society for Melanoma Research and the Chair of the Basic Mechanisms of Cancer Therapy NIH study section.