

# Thoracic Oncology and Surgery

## Research Activities

Our research activities are focused on four areas: 1) detection, diagnosis and treatment of peripheral-type minute lung cancers that are not visible in plain chest X-rays; 2) development of new and effective treatment modalities; 3) performing a basic collaborative study with the Research Center for Innovative Oncology; correlation between gene abnormalities and clinical characteristics; study of precancerous lesions; atypical adenomatous hyperplasia; 4) the mental status of patients with lung cancer and communications skills training for physicians who care for cancer patients.

## New Developments

To establish a standard for the management of minute pulmonary nodules that are found by chest CT, a protocol for prospective observational studies has been started. A limited resection trial for small ground-glass opacity lung lesions is currently under way. Pre- and post-resection pleural lavage cytology was a prognostic factor in non-small cell lung cancer (NSCLC) patients without pleural effusion (57) and may be useful for identifying candidates for post-operative chemotherapy (58).

A phase I/II study of S-1 + cisplatin and concurrent radiotherapy for stage III non-small cell lung cancer is ongoing. S-1+ cisplatin has also been evaluated in patients with stage IV NSCLC, and a randomized phase III trial comparing S-1+ cisplatin with docetaxel + cisplatin for advanced NSCLC is planned (59). A randomized phase III trial in patients with advanced NSCLC comparing carboplatin + paclitaxel with gemcitabine + vinorelbine followed by docetaxel showed a better

response rate favoring carboplatin + paclitaxel and a similar survival outcome between the two groups. Platinum-containing regimens remain the standard treatment for advanced NSCLC (60, 61). Based on a phase II study of gefitinib for chemotherapy-naive patients with NSCLC (62), a pan-Asian randomized trial has been started, comparing gefitinib with platinum-based chemotherapy as first-line chemotherapy in NSCLC patients with no or minimal smoking history (63). Outcome research on 2134 advanced NSCLC patients treated at our Division demonstrated that patient survival had significantly improved with the elapse of time. Improvement was more prominent in non-smokers and women, suggesting the benefit of tyrosine kinase inhibitors (TKIs). Interstitial lung disease (ILD) is a significant problem in the treatment of lung cancer, as is adverse drug reaction to TKIs (64). Multivariate analysis of 502 patients revealed that interstitial shadows on chest CTs and treatment history with TKIs were associated with the onset of ILD (65). Patients with interstitial shadow in their chest CT should thus be excluded from future clinical trials with TKIs.

A phase III trial comparing etoposide plus cisplatin with irinotecan plus cisplatin following etoposide plus cisplatin and concurrent thoracic radiotherapy for limited SCLC met the accrual goal. A phase II study of cisplatin plus irinotecan for large cell neuroendocrine carcinoma is currently under way (66).

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