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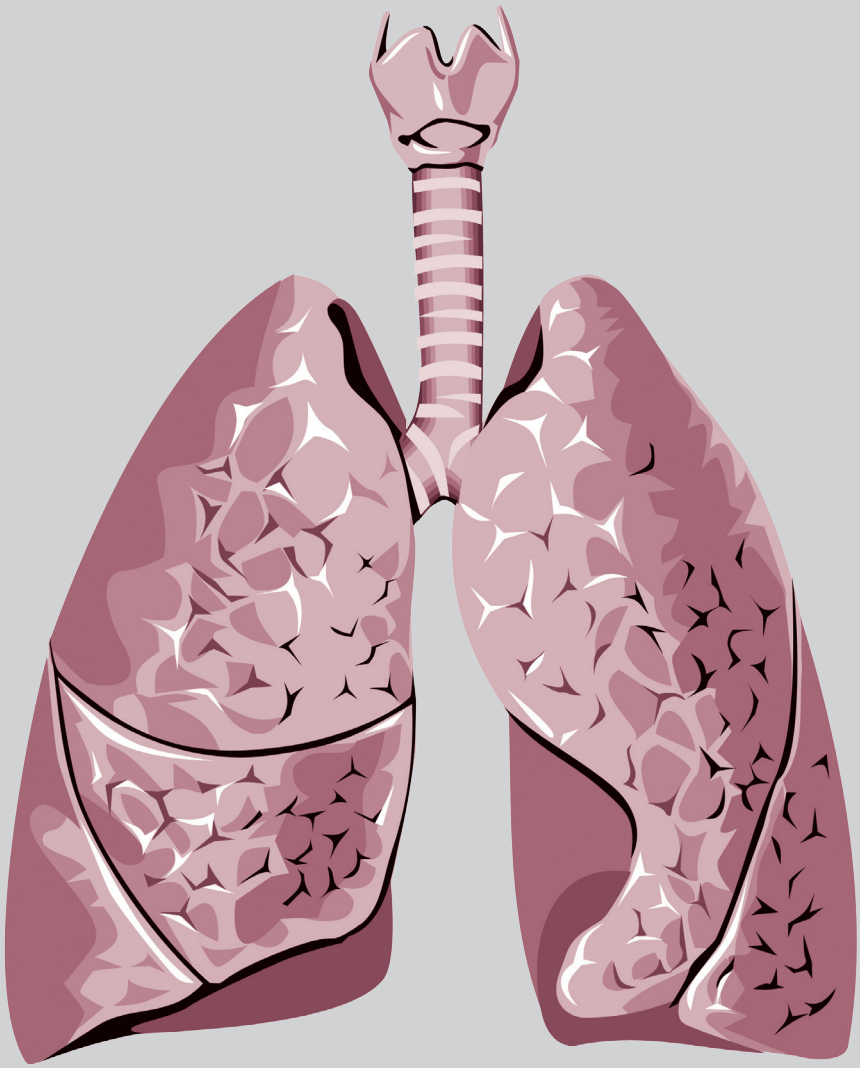

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Progression-Free Survival of NSCLC Patients Receiving Low-Dose versus a Standard Dose of EGFR-TKI

Hsing-Chun Chen[1], Shu-Lan Hsu[1], I-Hung Chen[1], Yi-Chun Chu[1], Ke-Chin Fang[1], Kuo-Sheng Fan[1], Chun-Liang Lai[1,2]

Background: Patients with NSCLC sensitive to tyrosine kinase inhibitors (TKI) targeting epidermal growth factor receptor (EGFR) may use lower doses of TKI for various reasons. The treatment outcome in terms of progression-free survival (PFS) of patients receiving a dose reduction of first-generation EGFR-TKIs has not been reported in a real-world population. Here, we evaluate whether PFS was compromised due to dose titration in patients receiving gefitinib or erlotinib.

Methods: A retrospective cohort study was conducted and patients with advanced NSCLC sensitive to EGFR-TKI were recruited. Patients whose dose of TKI was titrated two-thirds or less were assigned to the low-dose (LD) group. The standard-dose (control) group included patients receiving 250 mg of gefitinib or 150 mg of erlotinib daily during the whole course of treatment, and they were matched by sex and age with the LD group. The primary outcome was PFS. The secondary outcome was overall survival (OS).

Results: The LD group included 20 patients and the control group had 80 patients. The median PFS was 15.4 months in the LD group and 9.3 months in the control group (HR: 0.45, 95% CI: 0.29-0.71; *p*=0.0018). The median OS was 31.5 months in the LD group and 31.4 months in the control group (HR: 0.99, 95% CI: 0.49-1.98; *p*=0.98). In the subgroup of gefitinib treatment, the median PFS was 15.4 months in the LD group and 8.1 months in the control group (HR: 0.35, 95% CI: 0.2-0.63; *p*=0.0029). Among patients receiving erlotinib, the median PFS was 14.3 months in the LD group and 12.1 months in the control group (HR: 0.67, 95% CI: 0.32-1.38; *p*=0.2747). Median OS was similar in the LD group and the control in both subgroups of gefitinib or erlotinib treatment.

Conclusion: This study found that a lower dose of first-generation EGFR-TKI is a non-inferior treatment strategy for NSCLC patients sensitive to EGFR-TKI. Larger-scale prospective studies would be needed to confirm this finding. ***(Thorac Med 2020; 35: 44-51)***

Key words: EGFR-TKI, gefitinib, erlotinib, low dose, optimum biologic dose

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Early Detection of Chronic Obstructive Pulmonary Disease in Patients with Coronary Artery Disease

Wei-Chun Huang[1], Chia-Hung Chen[1,4,5,8], Biing-Ru Wu[1], Lien-Cheng Hsiao[7], Hung-Jen Chen[1,4], Chih-Yu Chen[1], Wei-Chih Liao[1,5,6], Ping-Han Lo[1,7], Wen-Chien Cheng[1,2,6], Chih -Yen Tu[1,2,3], Wu-Huei Hsu[1,2,8]

Objectives: Chronic obstructive pulmonary disease (COPD) and coronary artery disease (CAD) usually coexist and share the same risk factors. Early diagnosis of COPD in patients with CAD allows for early intervention, which improves the prognosis. The purpose of this study was to determine a method for early detection of COPD in this target population.

Methods: In this single-center, observational, prospective study, outpatients with CAD (aged >40 years with a history of smoking) were evaluated. Each patient underwent a COPD assessment after coronary angiography. Data on age, smoking status, pack-year history of smoking, body mass index (BMI), and dyspnea score (Medical Research Council), and the results of a COPD assessment test (CAT) and pre- and post-bronchodilator spirometry were obtained.

Results: A total of 166 patients were included in the study, most of whom were men (92.7%). A definitive diagnosis of COPD was made by spirometry in 32 patients (19.3%). Sixteen (50%) and 16 (50%) patients were assigned to group A and B respectively. Statistically significant differences in age, pack-year history of smoking, body weight, BMI, C-reactive protein (CRP) levels, serum sodium levels, and symptoms such as cough and sputum (CAT scores) were observed between CAD patients with COPD and those without COPD. Multivariate analysis revealed that aged >60 years (P<0.001), a smoking history >30 pack-year (P=0.006), body weight <60 kg (P=0.04), sputum production (CAT score, Sputum ≧1) (P=0.01) and a lower serum sodium level (Na <135 mg/dl) (P=0.028) were independent clinical characteristics of COPD development in CAD patients.

Conclusion: Approximately 19.3% of our outpatients with CAD had COPD. It is important to evaluate for COPD in CAD patients with aged >60 years, a history of smoking >30 pack-years, body weight <60 kg, more sputum production, and a low serum sodium level. ***(Thorac Med 2020; 35: 52-63)***

Key words: chronic obstructive pulmonary disease, cardiovascular disease, COPD assessment test

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Comparison of Outcomes with First- and Second-Generation Epidermal Growth Factor Receptor Inhibitors in Lung Adenocarcinoma Patients in Real-World Practice

Hsin-Wei Lin, Wen-Jui Wu, Chiate Yen, Yen-Ting Chen, Hsinpei Chung, Jian Su, Sheng-Hsiung Yang

Introduction: Tyrosine kinase inhibitors (TKIs) are the current standard first-line treatment for advanced lung adenocarcinoma harboring epidermal growth factor receptor (EGFR) mutations. In real-world practice, comparing the efficacy and toxicity of the 2 generations of TKIs is an important subject. The aim of this study, therefore, was to observe the clinical outcomes and adverse events of both first-generation and second-generation TKIs in real-world practice.

Methods: This study was conducted retrospectively using data collected at Mackay Memorial Hospital, Taipei, Taiwan, from January 1, 2013 to July 31, 2017. We analyzed progression-free survival (PFS) and overall survival (OS) to evaluate the effectiveness of first- and second-generation EGFR-TKIs in patients with EGFR mutations treated with first-line TKIs.

Results: A total of 176 patients were enrolled, including 138 patients in the first-generation TKI group (gefitinib and erlotinib) and 38 in the second-generation TKI group (afatinib). In the multivariate Cox proportional hazard model, second-generation TKIs had better PFS (hazard ratio (HR): 0.64, 95% confidence interval (CI): 0.42-0.97, p=0.036). However, OS was not statistically significantly different (HR: 0.66, 95% CI: 0.41-1.07, p=0.093). Furthermore, there was more folliculitis (second-generation TKI vs first-generation TKI: 68.4% vs. 47.6%, p=0.028), paronychia (60.5% vs. 16.1%, p<0.001), stomatitis (36.8% vs. 6.3%, p<0.001), and diarrhea (57.9% vs. 19.6%, p<0.001) of any grade in the second-generation TKI group.

Conclusion: The results of our study of real-world practice indicate that using second-generation TKIs yielded better PFS than first-generation TKIs at the cost of more side effects, especially folliculitis, paronychia, stomatitis and diarrhea. ***(Thorac Med 2020; 35: 64-74)***

Key words: lung adenocarcinoma, epidermal growth factor receptor, tyrosine kinase inhibitor

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Experience with Medical Thoracoscopy at a Single Institution

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Introduction: Medical thoracoscopy (MT) is a minimally invasive procedure for inspection and biopsy of the pleural space and for therapeutic intervention. Here, we summarize our experience with MT at National Taiwan University Hospital, Hsin-Chu Branch.

Methods: A retrospective chart review of patients who underwent MT procedures for diagnostic or therapeutic purposes for various pleural diseases or undiagnostic pleural effusion from December 2015 to August 2018 was performed. Those without a definite diagnosis were excluded.

Results: Thirty-eight patients who underwent 40 MT procedures were enrolled in the present study. Twenty-one MT procedures were performed for diagnostic purposes, 5 for therapeutic purposes, and 14 for both diagnostic and therapeutic purposes during the same procedure. For the 35 diagnostic procedures, the overall diagnostic yield was 100%. Of the 19 procedures for therapeutic purposes, 18 were performed for adhesiolysis/fibrinolysis or decortication, and only 4 patients in this population required further treatment with surgical thoracoscopy. The remaining 1 patient had hepatic hydrothorax and underwent repair of a diaphragmatic defect.

Conclusion: MT is practical for both the diagnosis and treatment of various pleural diseases. ***(Thorac Med 2020; 35: 75-83)***

Key words: cryobiopsy, diaphragm repair, medical thoracoscopy, pleural disease, surgical thoracoscopy

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Osimertinib Combined with Cetuximab for T790M and C797S Mutation in Non-small Cell Lung Cancer - Case Series

Chia-Ling Chang, Jin-Yuan Shih

Osimertinib, a third generation epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor, is proven to be effective in managing T790M mutation in non-small cell lung cancer (NSCLC). However, osimertinib becomes resistant when both T790M and C797S mutations are present. Our goal was to evaluate the treatment response of T790M and C797S-positive NSCLC treated with osimertinib and cetuximab. A retrospective chart review of EGFR T790M and C797S mutations positive NSCLC patients, treated with osimertinib and cetuximab at National Taiwan University Hospital, from July 2017 to October 2018 was performed. Four patients with NSCLC carried EGFR T790M and C797S mutations. They were all treated with osimertinib and cetuximab. Progression-free survival of these patients was 6.7, 4.9, 4.1 and 1 month, respectively. Osimertinib, combined with cetuximab seems to be beneficial for NSCLC patients with acquired T790M and C797S positive NSCLC. Further studies are necessary in order to understand the mechanism. ***(Thorac Med 2020; 35: 84-90)***

Key words: osimertinib, cetuximab, T790M and C797S mutations, non-small cell lung cancer

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Intralobar Bronchopulmonary Sequestration with Congenital Cystic Adenomatoid Malformation in an Adult

Kuan-Liang Chen[1,3], Yi-Jia Lin[2], Tsai-Wang Huang[1]

Pulmonary sequestration (PS) and congenital cystic adenomatous malformation (CCAM) are both rare congenial disorders with similar etiologies. PS derives a vascular supply from systemic circulation, but does not connect to the tracheobronchial tree. CCAM is characterized by the formation of a cyst with a pulmonary vascular supply that connects to the tracheobronchial tree. Intrapulmonary PS rarely occurs with CCAM. We describe the case of a 63-year-old woman who had intrapulmonary PS, with pathology results indicating a coexistence with CCAM. ***(Thorac Med 2020; 35: 91-95)***

Key words: intralobar bronchopulmonary sequestration, congenital cystic adenomatoid, malformation, adult

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