abdominal CT showed gastric wall thickening and multiple small lymph nodes enlargement around the stomach. Lung tumor was diagnosed as adenocarcinoma, cT4N2M1a (PLE), EGFR negative, ALK negative, PD-L1 (TPS) 90%. Gastrointestinal endoscopy revealed advanced gastric cancer with multiple ulcers, which TPS was negative. Surgical treatment was not selected for gastric cancer because of high risk of anaesthesia, chemotherapy for both of lung cancer and gastric cancer was preceded. Pembrolizumab was administered as the first line therapy in April 2017. After administration, the lung tumor was reduced, and the lesions of gastric cancer are also stable without exacerbation or bleeding. The patient has continued pembrolizumab for 1 year and 2 months without disease progression.

Results: In present case, pembrolizumab are effective to both of lung cancer and gastric cancer. It is believed that environmental factors such as smoking are cause of multiple cancers and related to high numbers of mutation of tumor genome. As smoking is one of the prognosis factor of anti-PD-1 therapy, the present case might demonstrate an effectiveness of pembrolizumab even for gastric cancer though its TPS is negative.

Conclusion: ICI such as pembrolizumab might be effective in synchronous multiple cancers, especially in smoking patients.

PREVENTING AND TREATING BRAIN METASTASES WITH THREE FIRST-LINE EGFR-TYROSINE KINASE INHIBITORS IN PATIENTS WITH EGFR MUTATION-POSITIVE ADVANCED NON-SMALL CELL LUNG CANCER

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Background and Aims: Brain metastases (BM) are common in advanced non-small cell lung cancer (NSCLC), and the prognosis is poor with few therapeutic options. This study evaluated the efficacy of three epidermal growth factor receptor-tyrosine kinase inhibitors (EGFR-TKIs) in preventing and treating BM in patients with EGFR mutation-positive advanced NSCLC.

Methods: Patients with EGFR mutation-positive advanced NSCLC who visited a tertiary referral center from December 1, 2013, to November 30, 2017, were analyzed retrospectively. They received gefitinib, erlotinib, and afatinib, respectively. The cumulative incidence of subsequent BM of initial non-BM patients, or afatinib until disease progression, death, or intolerable adverse events. The cumulative incidence of subsequent BM of initial non-BM patients, progression-free survival (PFS), and overall survival (OS) of the BM and non-BM patients were estimated and compared using the Kaplan–Meier and log-rank tests.

Results: 306 NSCLC patients were enrolled, with 116, 75, and 115 receiving first-line gefitinib, erlotinib, and afatinib, respectively. The afatinib group had a better PFS (12.7 vs. 9.8 months; HR 0.59, P = 0.001) and OS (39.1 vs. 22.0 months; HR 0.64, P = 0.035) than the gefitinib group. Afatinib tended to provide better BM prevention than gefitinib (BM cumulative incidence, HR 0.49; 95% CI. 0.34–0.71, P < 0.001) according to a Cox model adjusted for possible confounders. Patients with initial BM had a shorter PFS (P < 0.001) and OS (P = 0.015) than those without initial BM. Among the former, there were no differences in median PFS (P = 0.34) and median OS (P = 0.46) in the three EGFR-TKI groups.

Conclusion: Our data suggested that, compared to gefitinib, afatinib provided significant benefits in terms of PFS and OS in treating BM. Both had the same effectiveness in preventing subsequent BM.
Conclusion: Primary Pulmonary Synovial Sarcoma is a rare tumor. It should be considered as one of the differentials of primary lung cancer in middle-aged patients. More than academic interest, recognizing synovial sarcoma is essential for appropriate management, considering that this tumor carries a poor prognosis.

Efficacy of Salvage Chemotherapy After Immune Checkpoint Inhibitor in Non-Small Cell Lung Cancer Patients

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Background and Aims: Immune check point inhibitors (ICIs) have been developed and showed dramatic effect in some non-small cell lung cancer patients. Moreover, some retrospective studies suggested improvement of responses to chemotherapy after use of ICIs. We evaluated efficacy of salvage chemotherapy after exposure to ICIs.

Methods: Eligible patients were adults with NSCLC who received ICIs (Nivolumab or Pembrolizumab) as second or later line therapy. Clinical data were retrospectively analyzed.

Results: 26 patients were eligible. Median age was 68. 20 were males vs 6 female. 14 were adeno, 11 squamous, and 1 nons. 20 patients received Nivolumab, 6 patients were Pembrolizumab. 14 patients received ICIs as 2nd line therapy, 6 patients as 3rd line, 6 patients as 4th or later line. As for salvage chemotherapy, tegafur/gimeracil/oteracil (61.5%), DOX+RAM (15.3%), DOC (7.7%), nab-PTX (3.8%), Gem (3.8%), CPT-11 (3.8%) and VNR (3.8%) were used. Over all response rate (ORR) was 11.50%, Disease control rate (DCR) was 57.7%. Median progression free survival (PFS) was 3 months. Grade 1 interstitial lung disease was observed in 1 patient.

Conclusion: Although our data include heavily treated patients who received ICIs as third or later line, ORR/DCR and PFS were comparable to historical data of second line chemotherapy. ICIs might improve efficacy of salvage chemotherapy.

The EGFR Mutation Pattern After Epidermal Growth Factor Receptor-Tyrosine Kinase Inhibitors Therapy in Patients with Non-Small-Cell Lung Cancer harbouring activating Uncommon EGFR Mutations

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Background and Aims: Around 10–15% EGFR-mutated non-small-cell lung cancer (NSCLC) harbour uncommon EGFR mutations. After excluding T790M and exon 20 insertion, the remaining uncommon EGFR mutations are recognized to be sensitive to epidermal growth factor receptor-tyrosine kinase inhibitors (EGFR-TKIs). However, the EGFR mutation pattern of NSCLC patients with activating uncommon EGFR mutation who failed first-line EGFR-TKI therapies remained unknown.

Methods: From January 2011 to July 2017, NSCLC patients with EGFR mutation other than exon 19 deletion and L858R in National Taiwan University Hospital, National Taiwan University Hospital Yun-Lin Branch, and Far Eastern Memorial Hospital were included. The patients with de novo T790M or exon 20 insertion were excluded. The EGFR mutation data were recorded and analyzed in patients who received a second EGFR mutation test on disease progression after first-line EGFR-TKIs therapies.

Results: The EGFR mutation data of NSCLC patients (n = 1984) were obtained from National Taiwan University Hospital Yun-Lin Branch (91 patients), Far Eastern Memorial Hospital (403 patients) were retrieved. A total of 162 patients had activating uncommon EGFR mutation. Among them, 17 patients received EGFR mutation tests for disease progression after first-line EGFR-TKIs therapies. Five patients (29.4%) had T790M mutation, and 4 of them were obtained via liquid biopsy. Five patients (29.4%) lost their initial uncommon EGFR mutations. One patient (5.9%) had EGFR mutation shifted from L769V to L858R. Six patients (35.3%) remained their initial uncommon mutations. One patient (5.9%) had transformed into small-cell lung cancer but retaining the same EGFR mutation (S768I and L858R).

Conclusion: The proportion of acquired T790M in patients with activating uncommon EGFR mutation who failed first-line EGFR-TKIs may be relatively lower as compared to that reported in the previous literatures. Further large-scaled studies for validation are warranted.

Diabetes is Associated with the Risk of Progression and Prognosis in Lung Cancer

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Background and Aims: Lung cancer ranks the second in all cause of death (Mortality & Causes of Death, 2016) and in first place of all new malignancies, both in the incidence and deaths, while diabetes is expected to reach 439 million in 2030. While in present, the clinical prognosis of lung cancer is mainly determined by its clinical stage (Liang et al., 2013), and its staging factors are not included in the merger of diabetes. However, studies have shown that combined diabetes can increase the local recurrence rate (Varlooto et al., 2012). The study is designed to investigate the role of diabetes in lung cancer invasion and prognosis.

Methods: Patients with first diagnosed non-small cell lung cancer and without a second primary cancer were recruited from April 2015 to May 2016. There were 109 patients were diagnosed with diabetes (the diabetes group) and 335 patients without diabetes. All patients were followed up for 2 years. The outcome evaluation was independently by the clinical stage. The Kaplan–Meier method was used to compare survival curves for patients with and without diabetes. The Cox proportional hazards model was used to estimate hazard ratios for the association between diabetes, other prognostic factors and patient survival.

Results: The baseline characteristics of these patients showed no significant difference beside BMI. The median follow-up was 23 months (range, 3–36 months). Compared with those who with normal glucose and insulin level, patients with diabetes not only had a shorter period of progression free survival but also had a higher risk of all-cause mortality.

Conclusion: For our results diabetes was confirmed to be an independent factor of the risk of non-small cell lung cancer which was considered to associated with the risks of progression and prognosis. Further discover the underlying mechanisms may provide a new approach to cancer treatment.