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High serum CEA as predictor of better outcome in non-small cell lung cancer patients treated with EGFR-TKI

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Background : Several reports have indicated that serum carcinoembryonic antigen (CEA) and serum CYFRA 21-1 provide prognostic information in patients with non-small cell lung cancer (NSCLC). This study aimed to identify the prognostic role of CEA and CYFRA 21-1 in NSCLC patients treated with oral tyrosine kinase inhibitor. **Methods** : We retrospectively reviewed the clinical data and pretreatment serum CEA and CYFRA 21-1 levels from 127 patients with advanced NSCLC treated with oral epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI) between June 2002 and July 2007. Serum levels of CEA and CYFRA21-1 higher than 5.0 and 3.3 ng/ml, respectively, were considered as positive. **Results** : Sixty patients (47.2%) were male and 70 patients (55.1%) were never-smokers. The histological classification was adenocarcinoma in 91 patients (71.7%) and other histology in 36. Ninety-four patients were treated with gefitinib and 33 with erlotinib. The positive ratio of pretreatment serum CEA and CYFRA21-1 was 59.8% and 55.9%, respectively. The overall response rate was 26.8% and median progression-free survival was 4 months. Progression-free survival (PFS) of CEA positive patients was statistically better than that of negative patients (median 6 months in CEA positive vs. 2 months in CEA negative, P= 0.001), whereas CYFRA21-1 showed a trend toward poor prognosis in patients with elevated CYFRA 21-1 (median PFS 3 months in CYFRA 21-1 positive vs. 6 months in negative patients, P= 0.077). In univariate analysis association with PFS, variables with statistical significance were good performance status (ECOG 0~1), never-smoker, histology of adenocarcinoma, skin rash (grade 2~3) and EGFR mutation status. A multivariate analysis indicated positive EGFR mutation status (P= 0.002), good performance status (P= 0.007) and positive pretreatment CEA (P= 0.008) to be independent prognostic factors. **Conclusions** : These data show that pretreatment CEA positivity can be a prognostic factor for advanced NSCLC patients treated with oral EGFR-TKI.

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Clinical characteristics and outcomes of NSCLC with skeletal metastases at the time of diagnosis.

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Background :Skeletal metastases are one of the most common distant sites of metastatic non-small cell lung cancer (NSCLC) and assocated with great morbidity.The efficacy of chemotherapy for NSCLC presenting with skeletal metastases has not been determined. The objective of this study was to evaluate the efficacy of chemotherapy and the prognosis for NSCLC initially diagnosed with skeletal metastases. Patients and **Methods** : From 1999 to 2007, 139 consecutive patients with non-small cell lung cancer who had skeletal metastases at the time of diagnosis were retrospectively investigated. All patients had histologically or cytologically diagnosed NSCLC and an abnormal bone scan with skeletal metastases confirmed in 75 by MRI, 21 by PET or in 16 by plain films focusing on the abnormal areas of the bone scan. **Results** : Forty-four of the 139 patients had initial radiotherapy for the skeletal metastases and ten of 139 patients required surgery for skeletal related events (SRE) at initial diagnosis. Severe pain was the most common reason of radiotherapy or surgery in 26 patients followed by pathologic fracture and cord compression in 16 and 12 patients, respectively. Eighty-five of the 139 patients without skeletal related events at the time of diagnosis had initial chemotherapy. Among 85 patients, the most common SRE was radiotherapy in 36 patients followed by pathologic fracture and spinal cord compression in 10 and 4 patients, with median time to the first SRE being 7 months. During the platinum (n=80) based regimen treatment as a first-line chemotherapy, 39% SREs were observed as a first systemic failure to chemotherapy even when the other site maintain remission or stabilization. During the salvage chemotherapy (n=55), 40% SREs were found as a first systemic failure to chemotherapy . **Conclusion** : Our results provide that skeletal related events in their clinical course are relatively common in NSCLC with skeletal metastasis at the time of diagnosis. Furthermore, even during the period of responding or being stable to chemotherapy, SRE occurs frequently. Additional treatment modality, e.g. bisphophonate or other bone-specific modality, is required to control bone metastases and reduce SRE.