The Effectiveness of Erlotinib Against Brain Metastases in Non-Small-cell Lung Cancer Patients.

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Abstract

BACKGROUND: Brain metastases commonly occur in non-small-cell lung cancer (NSCLC), and patient prognosis is poor. Erlotinib, a specific inhibitor of epidermal growth factor receptor-associated tyrosine kinase, has shown antitumor activity in advanced NSCLC. This study evaluates erlotinib in the treatment for brain metastases from NSCLC.

PATIENTS AND METHODS: We retrospectively reviewed 40 NSCLC patients with brain metastases. All were treated with oral erlotinib and followed until disease progression, death, or intolerable side effects. EGFR mutations within surgical specimens were retrospectively examined in 9 patients.

RESULTS: For intracranial diseases, partial response (PR) was observed in 4 patients (10%), stable disease (SD) in 21 (52.5%), and progressive disease in 15 (37.5%), with an objective response rate of 10% and a disease control rate (DCR) of 62.5%. For extracranial diseases, DCR was observed in 17 patients (42.5%) (3 PRs+14 SDs) and progressive disease in 23 patients (57.5%). DCR within brain lesions in patients with activating EGFR mutations was 80% (1 PR+3 SDs), compared with 25% (1 SD) in patients with negative EGFR mutation. The median progression-free survival and median survival were 3.0 months and 9.2 months, respectively. There were no clinical factors associated with the response to erlotinib and survival as well (all P>0.05), whereas only the DCR in the brain was related to survival in multivariate analysis (P=0.000).

CONCLUSIONS: Erlotinib is modestly active and well-tolerated by NSCLC patients with brain metastases. Erlotinib seems to be more effective in patients with activating EGFR mutations. Erlotinib may be an alternative to traditional treatments in this patient population.

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