PROGNOSTIC FACTORS ANALYSIS OF LUNG CANCER PATIENTS WITH BRAIN METASTASIS AFTER WHOLE BRAIN IRRADIATION

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Purpose : Brain metastases occur commonly in patients with lung cancer. The aim of this study is to evaluate survival outcome and prognostic factors of whole brain radiotherapy (WBRT) for lung cancer patients with brain metastases.

Patients and Methods : We retrospectively reviewed the medical records of 386 lung cancer patients with brain metastases who received WBRT between January 2001 and December 2008. The end-point was overall survival (OS). Several potential prognostic factors were studied: age, gender, histology, performance status, number of brain metastases, prior therapy of lung cancer, dose schedule, and presence of extracranial metastases.

Results : No patient was lost to follow-up. 374 patients died with disease and 12 patients were alive. OS ranged from 2 weeks to 40 months (median 4.7 months). In the univariate analysis, better survival was observed in age < 65 years old ($p<0.0001$), female gender ($p<0.0001$), good performance status ($p= 0.0201$) and absence of extracranial metastases ($p= 0.0226$). In the multivariate analysis, age < 65 years old ($p<0.001$), female gender ($p<0.001$), good performance status ($p= 0.014$), absence of extracranial metastases ($p<0.001$) and absence of prior therapy of lung caner ($p= 0.003$) were favorable factors.

Conclusion : The survival outcome for lung cancer patients with brain metastasis after WBRT was poor. Age < 65 years old, female gender, good performance status, absence of extracranial metastases and absence of prior therapy of lung caner were favorable prognostic factors.

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Key words: Lung cancer, Brain metastasis, Prognostic factor, Whole brain radiotherapy

INTRODUCTION

Brain metastases are commonly seen in cancer patients. Nearly 10% of cancer patients will develop brain metastases over the course of their illness and the highest incidence for primary site is the lung, followed by the skin (melanoma) and the breast [1].

Patients with brain metastases may develop the symptoms including headache,

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