FEASIBILITY OF STEREOTACTIC BODY RADIATION THERAPY WITH CONCURRENT CHEMOTHERAPY FOR METACHRONOUS PRIMARY LUNG CANCER

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Background: Patients with lung cancer may develop a second primary lung cancer after treatment of the initial lesion (metachronous PLC). In those cases, it is difficult to distinguish primary lung cancer from lung metastasis. Therefore, we need both local therapy for a single lung lesion, and systemic therapy for micrometastasis. Stereotactic body radiation therapy (SBRT) is now the standard treatment for patients with inoperable Stage I non-small-cell lung cancer (NSCLC). However SBRT with concurrent chemotherapy may be feasible and effective for selected patients with NSCLC. This retrospective study was aimed at evaluating the safety and tolerability of concurrent SBRT and chemotherapy in patients with metachronous primary lung cancer.

Methods: We reviewed the records of 10 patients with metachronous primary lung cancer treated with SBRT and concurrent chemotherapy with curative intent from 2007 to 2013. All patients had T1 tumor. The median age was 65 years with a range of 58 to 79 years. The median delivered radiation dose was 48 Gy in 4 fractions. Concurrent chemotherapy regimen was cisplatin plus docetaxel, cisplatin plus vinorelbine, nedaplatin plus docetaxel, carboplatin plus docetaxel, and carboplatin plus paclitaxel, carboplatin plus docetaxel.

Results: All patients received SBRT on schedule. Concurrent chemotherapy was successfully accomplished as originally planned in 10 patients. Initial effect of SBRT plus chemotherapy could be evaluated in all cases. Complete local remission was achieved in 9 patients and Partial local remission was achieved in one patient. Local recurrence were not observed in any patient. Only one patient alone had distant metastases. A grade 3 or 4 neutrophil count decreased occurred in 7 patients, grade 3 febrile neutropenia in 2 patients, and grade3 anemia in one patient. No treatment-related deaths were observed.

Conclusion: Our study showed good feasibility and safety of SBRT and concurrent chemotherapy.