

Systemic chemotherapy using paclitaxel and carboplatin plus regional hyperthermia and hyperbaric oxygen treatment for non-small cell lung cancer with multiple pulmonary metastases: preliminary results

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Abstract

Purpose: The purpose of this retrospective case series was to evaluate the toxicity and efficacy of systemic chemotherapy using paclitaxel and carboplatin plus regional hyperthermia (HT) and hyperbaric oxygen treatment (HBO) for non-small-cell lung cancer (NSCLC).

Materials and methods: Twenty-two patients with NSCLC with multiple pulmonary metastases intravenously received paclitaxel (50 mg/m²), carboplatin (area under the curve of 1.0-1.5) and 10% glucose weekly for 3 out of 4 weeks. Hyperthermia (HT) of the whole thoracic region was also administered weekly during intravenous infusion of carboplatin in all patients. In addition, 16 (72%) of 22 patients received hyperbaric oxygen (HBO) treatment immediately after weekly chemotherapy. A total of 107 cycles were performed in 16 patients with HBO, and 27 cycles in 6 patients without HBO. The toxicity and efficacy of these patients were retrospectively analyzed.

Results: Both the hematologic and non-hematologic toxicities were mild and leucopenia/neutropenia of > or = grade 3 was seen in one patient, while pneumonitis of > or = grade 3 occurred in one patient. Fourteen (64%) of 22 patients had an objective response.

The median time to progression of disease in all patients was 8 months and in 16 patients with HBO was 9 months. Four (44%) of 9 patients with prior chemotherapy including paclitaxel and carboplatin obtained objective responses.

Conclusions: The novel combined therapy of paclitaxel and carboplatin with HT and HBO may therefore be a feasible and promising modality for treating NSCLC with multiple pulmonary metastases, and the results justify further evaluation to clarify the benefits of this treatment regimen.