

Intrapleural administration of a combination of cisplatin and fibrin glue for pleural lavage cytology-positive patients with non-small cell lung cancer.

Authors: Shinohara H., Koizumi T., Aoki T., Yoshiya K., Koike T., Tsuchida M.

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Abstract:

Background: Several reports have described intraoperative intrapleural hypotonic cisplatin treatment as effective for suppressing the appearance of pleuritis carcinomatosa in resected patients who demonstrated positive findings from pleural lavage cytology. Furthermore, fibrin glue may allow the efficacy of cisplatin to be prolonged. We investigated the effectiveness and safety of intrapleurally administering a combination of cisplatin and fibrin glue. **Methods:** This study retrospectively analyzed 6923 patients who underwent resection of primary lung cancer in Niigata Prefecture between January 2001 and December 2010. Sixty-four patients with positive pleural lavage cytology underwent complete resection and showed p-stage I. Of these, 17 consecutive patients (8 men, 9 women) received intraoperative intrapleural administration of a combination of cisplatin and fibrin glue (treatment group; mean age, 68.6 \pm 7.9 years; range, 55-85 years). The control group received no intraoperative treatment of the pleural space. Intrapleural administration treatment involved spraying the entire thorax with cisplatin (25 mg) and fibrin glue before closure of the open thorax. Histopathological tumor types included adenocarcinoma in 16 cases and squamous cell carcinoma in 1 case. According to the TNM classification, 2 cases were stage IA and 15 cases were stage IB. **Results:** No complications were seen with intrapleural administration. In the treatment group, median time to followup was 42 months and the 5-year survival rate was 75.0%, respectively. Two of these 17 patients showed distant recurrence (brain metastasis, n=1; axillary lymph node metastasis, n=1), and none had locoregional recurrence. In the control group, median time to follow-up was 33.8

months and the 5-year survival rate was 45.1%. Recurrence developed in 16 patients (locoregional recurrence, n=7; distant recurrence, n=4; unknown lesion, n=5). No significant difference was observed between groups ($p=0.0565$), but 5-year survival rates for patients with treatment tended to be better than in the control group. Conclusion: Intraoperative intrapleural administration with a combination of cisplatin and fibrin glue for patients with positive results from pleural lavage cytology was found to effectively suppress the appearance of locoregional recurrence without severe complications. (Figure presented).