Editorial

VATS lobectomy facilitates the delivery of adjuvant docetaxel-carboplatin chemotherapy in patients with non-small cell lung cancer

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This study analyzes the ability to deliver adjuvant chemotherapy in patients after lobectomy, comparing the thoracoscopic (VATS) to the open approach (1). The study was performed as a sub-group analysis of an open-label, single arm study designed to assess the safety and tolerability of docetaxel (75 mg/kg) and carboplatin (AUC 5.5) administered for 3 cycles after resection for curative intent in 133 patients with stage Ib–IIIa non-small cell lung cancer (NSCLC). The trial is remarkable in its inclusion of 10 centers in China and 1 center in the US, as well as its rapid accrual (<6 months).

Overall, the complication rate was relatively low: febrile neutropenia complicated treatment in 12 patients (9.0%), including 4 VATS and 8 open thoracotomy patients (P=0.26). Completion of the 3-cycle adjuvant regimen was successfully achieved in 86% of patients, including 62/66 (93.9%) VATS patients compared to 53/67 (79.1%) open thoracotomy (P<0.01). Thus, as demonstrated in other studies (2), patients who underwent thoracoscopic lobectomy were better able to tolerate adjuvant chemotherapy as compared to those who underwent thoracotomy. In this study, the overall tolerance was relatively high in both groups, a tribute to the trialists for their care, especially considering such a low complication rate. This study further solidifies VATS lobectomy as the preferred procedure, perhaps even more important in those that receive adjuvant therapy. It is possible that this advantage might explain in part the outcome advantages seen in VATS patients, as demonstrated in two important meta-analyses (3,4). Of note, this difference in chemotherapy compliance has been demonstrated to improve survival in breast cancer (5).

Several questions arise as the study is reviewed. How is chemotherapy compliance best measured? In this study, the percentage of patients that received all 3 cycles is the primary end-point, but there is little commentary on dose reduction or dosed delay. In comparison, in the study by Petersen and colleagues, chemotherapy compliance was measured by the percentage of patients who received all four cycles of the planned therapy, the percentage of patients that received at least 75% of the planned regimen, and by the avoidance of dose reduction or dose delay.

What is the best timing regarding chemotherapy? Is it possible that VATS patients could receive chemotherapy earlier, and would that make a difference? No study has yet addressed that question. In this study, there was no difference in the time from surgery to initiation of chemotherapy between the VATS patients and the open thoracotomy patients (32±10 and 34±9 days, respectively, P=0.4); it is not clear, however, how it was decided when to start chemotherapy (1).

Is it possible that VATS lobectomy would allow patients to receive chemotherapy that is considered more toxic yet more effective (cisplatin *vs.* carboplatin)? Is it possible that patients who undergo more complex resection (VATS lobectomy and chest wall resection, or VATS pneumonectomy) might be candidates for adjuvant chemotherapy, whereas those who underwent thoracotomy would not?

The ongoing debate regarding the advantages of thoracoscopic lobectomy continues, but the weight of the evidence is conclusive. Not only has it been demonstrated

that thoracoscopic lobectomy is at least as oncologically effective as the open procedure, with numerous attendant quality of life and outcome advantages, it is possible that thoracoscopic lobectomy is actually the superior oncologic procedure (1-4). And, it is possible that the demonstrated improved chemotherapy compliance is at least in part responsible for the improved survival after resection of lung cancer. While it is important for thoracic surgeons to prove that there is a survival advantage associated with superior chemotherapy compliance, the results of these studies should be convincing. In summary, thoracoscopic lobectomy is associated with better postoperative recovery in many ways, including the fact that patients will receive more effective adjuvant chemotherapy.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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