

# Preoperative chemotherapy in patients undergoing pulmonary resection for metastatic soft tissue sarcoma

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**Background and purpose:** Approximately 50 % of patients with soft tissue sarcoma develop metastasis, primarily to the lungs. Although complete surgical removal may lead to long term survival optimizing treatment in the metastatic situation is warranted. Hence preoperative chemotherapy was included for selected patients. **Methods and Results:** 110 patients with soft tissue sarcoma who underwent complete pulmonary metastasectomy at our institution from 1980 to 2007 were included in this retrospective study. 68 (62%) received preoperative chemotherapy. Time to first metastasis was shorter in the preoperative chemotherapy cohort than in the surgery only cohort (median 15 vs. 35 months,  $p=0.002$ ), and the number of metastases was higher. The median post-metastasis sarcoma specific survival (DSS) was 28 months with preoperative chemotherapy and 49 months with surgery alone ( $p = 0.23$ ), and time to progression (TTP) was significantly lower (median 12 vs. 20 months,  $p = 0.042$ ). 7% of patients in the preoperative chemotherapy cohort had good histological response. These showed improved DSS compared with poor responders ( $p=0.038$ ) and with surgery alone ( $p = 0.086$ ). Radiological response criteria also

displayed improved DSS and TTP for patients with partial response compared with progressive disease (median 44 vs. 18 months,  $p=0.014$  and 16 vs. 8 months,  $p= 0.012$ , respectively). **Interpretation:** Although conclusions are difficult to draw from this highly selected cohort, our study indicates no overall benefits in outcome for patients undergoing preoperative chemotherapy prior to pulmonary metastasectomy. Patients with good histological or radiological response, though, might profit in outcome.