Introduction: Platin-based perioperative chemotherapy plus curative surgical resection has become the standard of care in Europe for locally advanced esophagogastric adenocarcinoma. In contrast to preoperative chemotherapy, the postoperative administration of chemotherapy is omitted in a high percentage of patients. We conducted this prospective database study to analyse the impact of postoperative completion of perioperative chemotherapy on patient outcome.

Methods: Patients with esophagogastric adenocarcinoma (cT3-4 and/or cN+) were treated with preoperative chemotherapy (FLOT/ECF/EOX) plus curative surgical resection. All patients were pretherapeutically designated for administration of postoperative chemotherapy. Patient demographics, postoperative tumour stages, histopathological regression and administration of postoperative chemotherapy were correlated with overall survival.

Results: One hundred thirty-four patients were included in the analysis. Thirty-eight tumours were located in the stomach and 96 at the esophagus. Pretherapeutic staging classified 16 tumours as T2, 111 as T3 and 7 as T4 and indicated nodal disease in 98 patients. Median follow-up was 2.8 years. In the analysed collective, 57% (n = 76) of patients received preoperative FLOT, 49% (n = 53) preoperative ECF and 4% (n = 5) preoperative EOX chemotherapy. The 5-year survival for the whole collective was 58%. Designated postoperative chemotherapy was omitted in 36% (n = 48) of the patients. 5-year survival was 75.8% in patients who received pre- and postoperative chemotherapy and 40.3% in patients with only preoperative chemotherapy (p < 0.001). Administration of postoperative chemotherapy was identified as an independent predictor of improved survival (RR: 0.45; p = 0.016). Analysis of subgroups revealed a pronounced survival benefit after administration of postoperative chemotherapy in patients with ypN+ stages (5-year survival 64.5% versus 9.7%, p = 0.002) and poor histopathological regression of the primary tumour to preoperative chemotherapy (5-year survival 55.5% versus 19.3%, p = 0.015).

Conclusion: The presented data shows that postoperative chemotherapy adds an important part to the beneficial effect of platin-based perioperative chemotherapy on oncologic outcome in perioperative chemotherapeutical treatment of esophagogastric adenocarcinoma. The administration of postoperative chemotherapy was identified as an independent prognosticator of survival in platin-based perioperative chemotherapy-treated patients. Therefore, all patients should be treated by postoperative adjuvant platin-based chemotherapy after preoperative neoadjuvant platin-based chemotherapy plus curative surgery. Especially patients with limited histopathological regression to preoperative neoadjuvant chemotherapy and patients with lymphonodular tumour involvement seem to benefit from adjuvant systemic tumour treatment achieved by postoperative chemotherapeutic completion of platin-based perioperative chemotherapy protocols.