Surgery is still the only curative therapy for locoregional gastric cancer. Hereby it is important to achieve negative margins (R0 resection) and to perform an adequate lymph-node dissection (D2 lymphadenectomy). Unfortunately most cases of gastric cancer are diagnosed in a locally advanced tumor stage. The poor prognosis of patients with these tumors is due to the frequent recurrences after primary resection in curative intent. This observation led to the development of (neo)adjuvant treatment concepts. Beginning with the end of the 1980s, more and more patients with locally advanced tumors were subjected to a preoperative, perioperative, or postoperative treatment in order to improve the prognosis after curative resection. However, in different regions of the world, different regiments are preferred. While adjuvant chemotherapy is the established treatment in Asia, adjuvant chemoradiotherapy is favored in the USA and perioperative chemotherapy is considered the treatment of choice in Europe. However, recently a certain convergence of the different philosophies is to be observed. This article covers the relevant studies dealing with neoadjuvant and adjuvant treatment concepts and gives an overview on the latest developments in this field.