For high-risk soft tissue sarcomas (HR-STS) of adults, new treatment strategies are needed to improve outcome with regard to local control and overall survival. Systemic chemotherapy has been integrated either after (adjuvant) or before (neoadjuvant) optimal local treatment by surgery and radiotherapy in HR-STS. The presentation summarizes the results of the combination with regional hyperthermia (RHT) as a treatment strategy to open a new therapeutic window.

Under the auspices of the European Organization for Research and Treatment of Cancer (EORTC) and the European Society of Hyperthermic Oncology (ESHO) we recently completed a randomized Intergroup phase III trial (EORTC 62961/ESHO RHT-95) of multimodal treatment in patients with primary (S1 group) and recurrent (S2 group) disease or after inadequate surgery (S3 group: resections with positive margins or macroscopic residual tumor) in high-risk STS (tumor size ≥ 5 cm + histologic grade of 2 or 3 + deep location + extracompartmental extension). In this trial, all patients with HR-STS to extremity and non-extremity received neoadjuvant systemic chemotherapy (four cycles of the EIA regimen) and were randomized in two arms: chemotherapy alone or combined with RHT, followed by definitive surgery and radiotherapy. Thereafter, in addition, four cycles of the EIA regimen were administered with or without RHT according to the initial randomization. The results in terms of overall outcome for extremity and non-extremity STS will be presented.