

# EXPERIENCE IN TREATMENT OF COLORECTAL LIVER METASTASES

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More than 30 % of patients with colorectal cancer developed liver metastases. Radical surgical resection of liver metastases remains the only chance of cure with more than 50% 5-year survival. Unfortunately, most of the patients are presented with unresectable metastases because of their size, number, location or inadequate liver remnant after resection.

In unresectable disease, many ablative approaches can be used. The most frequent is radiofrequency ablation(RFA). However, RFA is less effective in the treatment of metastases in the vicinity of major hepatic vessels due to heat sink effect.

From 2009 to 2018 35 patients with colorectal liver metastases were treated with electrochemotherapy at our department. In our first published analyses, 29 metastases in 16 patients were treated with electrochemotherapy during open surgery by US-guided insertion of long needle electrodes (with variable or fixed geometry) into and around the tumor. Up to three metastases not exceeding 3 cm in the diameter were treated with electrochemotherapy. Patients were divided into three groups. In the first two groups were patients with two-stage liver surgery. In the first operation, some of the metastases were treated by electrochemotherapy and removed during the second operations. In the third group patients with unresectable metachronous metastases were treated with electrochemotherapy as the only treatment option.

There was no perioperative mortality. Three patients required reoperation after electrochemotherapy; two because of

colon perforation and one because of obstruction of small bowel because of adhesions. None of these complications were related to electrochemotherapy. During or after electrochemotherapy no major heart rhythm changes or myocardial ischemia were found.

Radiological complete response was observed in 85% of treated metastases and partial in 15% after the first radiological evaluation. At the second evaluation, at a median of 147 days after electrochemotherapy, 71% of metastases were still in complete response. Response to electrochemotherapy was the same in metastases located close to major hepatic vessels and metastases away from the vessels. On pathological analysis, non treated metastases had a significantly higher percentage of residual viable tumor compared to electrochemotherapy treated.

We found regressive changes in the whole electrochemotherapy-treated area of the liver with disruption of vessels less than 5 mm in diameter and preservation of the larger vessels and biliary ducts.

Electrochemotherapy of liver metastases is feasible, efficient and safe treatment modality, especially for the metastases in the vicinity of major hepatic vessels.