

Balloon-Occluded Transarterial Chemoembolization for Peritoneal Metastasis of Hepatocellular Carcinoma

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We report unusual 2 cases treated with Balloon-occluded transarterial chemoembolization (B-TACE) for peritoneal hepatocellular carcinoma (HCC) metastasis. An 87-year-old female with hepatitis-C related cirrhosis underwent radiofrequency ablation (RFA) repeatedly. Computed tomography showed a 30 mm diameter tumor seeding adjacent to the ascending colon. Digital subtraction angiography (DSA) of the gastroduodenal artery showed a tumor stain fed by an omental arterial branch distributing from the greater curvature of the stomach. Since ultra-selective cannulation was difficult, a micro-balloon catheter was selected and advanced to the right gastroepiploic artery on the central side of the omental artery, and B-TACE was performed at this point. A 78-year-old male with hepatitis-C related cirrhosis underwent RFA and TACE repeatedly, but multiple HCC developed and a 45 mm diameter metastatic tumor adjacent to the descending colon was observed. DSA of the inferior mesenteric artery showed a tumor stain fed by the several peripheral branches of the left colic artery. Since one of these several branches was noted to be the normal mesenteric blood vessel by selective angiography, the position of the tip of the micro-balloon catheter was finely adjusted by balloon inflation to prevent inflow of the contrast medium into the normal blood vessel, and then B-TACE was performed.

The aims of the study were to evaluate therapeutic efficacy and to determine the prognostic factors for treatment success in patients with liver metastases from colorectal cancer (CRC) treated with transarterial chemoembolization (TACE). A total of 564 patients (mean age, 60.3 years) with liver metastases of CRC were repeatedly treated with TACE. In total, 3,384 TACE procedures were performed (mean, six sessions per patient). The local chemotherapy protocol consisted of mitomycin C alone (43.1%), mitomycin C with gemcitabine (27.1%), mitomycin C with irinotecan (15.6%) or mitomycin C with irinotecan and cisplatin (15.6%). Embolization was performed with lipiodol and starch microspheres

Tumor response was evaluated using magnetic resonance imaging or computed tomography. The change in tumor size was calculated and the response was evaluated according to the RECIST-Criteria. Survival rates were calculated according to the Kaplan–Meier method. Prognostic factors for patient's survival were evaluated using log-rank test. Evaluation of local tumor control showed partial response in 16.7%, stable disease in 48.2% and progressive disease in 16.7%. The 1-year survival rate after chemoembolization was 62%, the 2-year survival rate was 28% and the 3-year survival rate was 7%. Median survival from the start of chemoembolization treatment was 14.3 months. The indication ($p = 0.001$) and initial tumor response ($p = 0.015$) were statistically significant factors for patient's survival. TACE is a minimally invasive therapy option for controlling local metastases and improving survival time in patients with hepatic metastases from CRC. TN stage, extrahepatic metastases, number of lesions, tumor location within the liver and choice of chemotherapy protocol of TACE are none significant factors for patient's survival.

After sterile covering of the inguinal region and injection of a local anaesthetic (Scandicaine 1%), the superficial femoral artery was punctured in standardized Seldinger technique and a 5-F sheath (Introducer 2®, Terumo, Frankfurt, Germany) was introduced. After selective catheterization an exploratory overview of the abdomen and angiography of the celiac trunk as well as indirect portography were performed. A 4-F Cobra catheter (Terumo) then was placed in the celiac trunk and advanced beyond the gastroduodenal artery. After positioning the catheter in the hepatic tumor-supplying vessel in selective or superselective technique selected chemotherapy drugs were administered intra-arterially. The tumor vessels were occluded. After embolization, devascularization was confirmed with additional angiography of the hepatic artery.

The decision to re-TACE was taken depending on tumor response. The required minimum number of procedures was three interventions. The time interval between two treatments was 4 weeks. There was no predetermined number of procedures planned for each patient; instead patients were treated depending on the patient response to the treatment. The maximum number of TACE procedures in our study was 29 sessions. All patients were treated as outpatients.

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