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MONITORING THE REGIONAL CHEMOTHERAPY OF THE LIVER BY ARTERIAL ANGIO-CT (AACT)

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The response of metastases of the liver to regional chemotherapy (RC) depends on the following:

1. effect of the cytostatic agents used;
2. sufficient perfusion of the cytostatic agent in the liver, especially at the site of the metastases.

In order to assess the perfusion pattern of the liver after the implantation of the infusaid pump and its changes during the treatment, we carried out an AACT in 34 pts. immediately after the implantation of the pump and in 3 months intervals thereafter; each time 0.3 ml/sec. of contrast medium (CM) were infused continuously via the side-port. In 31 patients the placing of the catheter was carried out via the A.gastro-duodenalis, in 1 patient via the A.lienalis into the A.hepatica, and in 2 pts. via the A.hepatica dextra and sinistra. Results: Primary AACT n=34 (homogenous perfusion of both liver lobes (LL) n=22; one LL more perfused than the other one n=9; perfusion of one LL only n=3. The control AACT in 3 months intervals showed a change of the initially homogenous perfusion of the liver in 6 pts. The liver was still perfused, but the concentrations of CM in the right and left LL were different. In 3 pts. with initially homogenous liver perfusion no more perfusion of the left LL could be detected during the treatment; obviously a left-sided spread of metastases occurred, while a partial regression or stable disease was to be seen on the right. This is probably caused by a blockage of the A.hepatica sinistra, due to intra-hepatic progressive metastases. A regular check-up of the perfusion is of utmost importance. Regional chemotherapy is inadequate when incomplete perfusion of the liver occurs in the course of treatment. Then it should be supplemented by systemic therapy.

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Liv 15

THE VALUE OF CEA AND/OR CA 19-9 SERUM COURSE IN THE REGIONAL CHEMOTHERAPY OF LIVER METASTASES FROM COLORECTAL CARCINOMA

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The knowledge that liver metastases from colorectal carcinoma (CRC) are mainly supplied arterially has led to the development of intra-arterial catheter techniques aiming at the perfection of local high-dose chemotherapy of liver tumors. Up to now 35 pts. with documented hepatic metastases from CRC have been included in a prospective clinical trial, in which the role of combined continuous intra-arterial and intravenous chemotherapy with FUDR using the infusaid A/V pump versus continuous intraarterial chemotherapy alone is evaluated. The pumps are filled with FUDR 0.3 mg/kg/die. The response of liver metastases to regional chemotherapy is determined by estimation of CEA and/or CA 19-9 serum concentrations, and the extent of liver tumors by means of the arterial angio CT.

Results:	Tumor extent of liver volume (%)			Tumor extent of liver volume (%)		
	CEA ng/ml <25	25-50	>50	CA 19-9 <25	25-50	>50
≤3	1	1	0	≤37	2	8
3-10	0	3	1	37-120	3	3
≥10	6	10	12	≥120	2	3

Most of the pts. had pathological CEA values preoperatively, but only about 50% of them had a pathological concentration of monoclonal antigen (CA 19-9). During the therapy we could observe the following titer course:

1. The majority of the pts. with colorectal metastases to the liver treated with regional chemotherapy (RCT) showed an objective response combined with a decrease in CEA and/or CA 19-9 and size of the tumor.
2. A stable disease in the liver with an increase of CEA and/or CA 19-9 values during the RCT is danger signal for extrahepatic relapse formation of the cancer.

The course of CEA/CA 19-9 reflects the response of liver metastases to regional chemotherapy.

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SURGERY AND HEPATIC ARTERIAL INFUSION (HAI) IN THE TREATMENT OF LIVER METASTASES FROM COLO-RECTAL CANCER

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We analyzed retrospectively the results of 19 patients, who underwent liver resection for metastases of colo-rectal cancer from 1976 to 1984 and of 7 patients who were treated by HAI because of inoperable disease since 1984. For HAI, an implantable infusion pump was used with continuous FUDR.

In the 19 resected patients, hospital mortality was zero. 13 patients were evaluable. Nine of them died from disease, 5 - 29 months after surgery. Three are free of disease at 29 - 51 months. 2 y.-survival rate is 46 %. Eight patients (60 %) developed recurrent disease in the liver. Of the 7 non-resectable patients treated by long-term HAI, we registered minor responses in 3 cases, PR in 4. 2 patients died, 4 and 6 months after start of therapy. Median survival time has not yet been reached. Main complication is severe toxic hepatitis (2 cases) and biliary sclerosis (1 case).

We conclude that 1.: all resectable metastases from colo-rectal cancer in the liver should be removed, 2.: in patients non-resectable, HAI is the treatment of choice and 3.: HAI should be tried as an adjuvant treatment after resection of solitary or localized metastases. Controlled randomized studies are necessary
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Liv 17

REGIONAL CHEMOTHERAPY OF THE LIVER IN COLO-RECTAL MALIGNANCIES

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Three different programs of regional chemotherapy of the liver in colo-rectal malignancies are presented:

1. Prophylactic chemotherapy with 5 FU via the umbilical vein in patients without liver metastases perioperatively.
2. Stabilizing chemotherapy after metastasectomy with Mitomycin initially, followed 5 FU for 7 days via the umbilical or portal vein.
3. Palliative intraarterial chemotherapy in patients with liver metastases. Identical drug administration as in program 2.

Resultate:

1. Preliminary results of almost 3 years follow-up time demonstrate a tendency of higher survival rate (14%) in the study group (BMDP, n.s.). There are only Dukes B und C cases included.
 2. Stabilizing chemotherapy after metastasectomy (6 patients: 1 patient died 6 months after hemihepatectomy due to lung metastases. The ranges from 2 to 28 months.
 3. The palliative intraarterial application of chemotherapy (7 patients) reduces the upper abdominal pain caused by the enlarged liver. It can not be proved whether further development of the metastases will be influenced by the chemotherapy.
- The chemotherapy in the 3 groups is generally the catheter systems (Port-A-Cath) (R), Implantofix, (R) rarely concerning the blood count.

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