Downstaging colorectal liver metastases by concomitant unilateral portal vein ligation and selective intra-arterial chemotherapy

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BACKGROUND: Although selective intrahepatic arterial chemotherapy successfully downstaged irresectable colorectal liver metastases in a previous study, curative resection was rarely possible, as the remnant healthy liver volume was inadequate. This pilot study evaluated the efficacy of concomitant unilateral portal vein ligation and selective intrahepatic arterial chemotherapy in downstaging such tumours. METHODS: The study included 11 patients with irresectable colorectal liver metastases. Selective intrahepatic arterial chemotherapy was delivered using a subcutaneous pump, and each patient underwent concomitant unilateral portal vein ligation of the hemiliver judged to have the higher tumour load. Chemotherapy involved serial administration of floxuridine for 2 weeks every 4 weeks. RESULTS: All patients developed significant atrophy of the hemiliver subjected to portal vein ligation and contralateral hypertrophy. There was no increase in tumour load within 6 months of therapy, and the load decreased by 60 per cent in the hemiliver ipsilateral to the ligated vein. At 3 months, six of 11 patients showed a significant response to chemotherapy. In four patients, downstaging allowed curative resection after only three cycles of chemotherapy. These patients survived at least 20 months afterwards. CONCLUSION: Combined unilateral portal vein ligation and selective intrahepatic arterial chemotherapy produced substantial atrophy of the ipsilateral hemiliver along with contralateral hypertrophy, without increased tumour growth in the regenerating hemiliver.

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