

LETTER TO THE EDITOR

Impressive regression of primary liver cancer after treatment with sirolimus

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To the editor,

Hepatocellular cancer (HCC) has an extremely poor prognosis due to the extent of the tumour and underlying liver disease. Except for liver transplantation and liver resection there is no proven therapy [1]. Although regarded as a chemo-insensitive tumour, chemoembolisation for selected patients offers a limited survival benefit [2]. For most patients only best supportive care is available.

Sirolimus is established as an immunosuppressive agent used in kidney - and liver-transplantation. It inhibits mTOR, downstream the Akt pathway, regulating cell-regulatory and nutrient proteins [3]. The activation of Akt seems to be important in HCC and correlates with prognosis [4]. Based on *in vitro* studies and animal experiments, showing restricted growth of a hepatoma when sirolimus was given, [5] a pilot study was undertaken. The study was approved by the Ethics Committee of the Faculty of Medicine, University of Gothenburg.

The first case included was a 58 year old Caucasian musician. He was admitted for consideration for liver resection or liver transplantation of a large central liver tumor. He had a positive Hepatitis C serology and was a heavy alcohol abuser. BMI was 43kg/m² but he had a 10 kg weight loss during the last month. He ran a continuous fever above 38 centigrade. His alpha-fetoprotein at diagnosis was 25 300 µg/l. No histology confirmation of diagnosis was done as CT documented tumours in a cirrhotic liver and this level of alpha-fetoprotein is considered as proof for HCC. His liver function was classified as Child-Pugh A. MRI revealed a central liver tumor, diameter 11 cm and a portal vein thrombosis. He was rejected for surgery and was included in the Sirolimus study.

His CT after 3 months was unchanged but an MRI after 6 months showed a remarkable tumor regression, the tumor diameter was reduced to 5 cm.

This partial remission was confirmed after 9 months. Alpha-fetoprotein declined to the lowest value 10 900 µg/l after five months (and liver laboratory tests were normalized).

After 3 months he returned to his job as a professional dance band musician but he did not discontinue his drinking habits. After nine months there was clinical evidence of tumor progression. The patient succumbed 20 months after the initiation of sirolimus treatment.

This case suggests that sirolimus therapy could have a tumor effect in patients with advanced primary hepatocellular cancer. As a remarkable tumor regression was registered in this patient we were obliged at this premature time to inform about it.

References

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