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LETTER TO THE EDITORS

Sorafenib for hepatocellular carcinoma before liver transplantation

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Dear Sirs,

Management practices of patients with hepatocellular carcinoma on the liver transplant waiting list vary considerably between centres. The potential of the kinase inhibitor Sorafenib to benefit patients with hepatocellular carcinoma on transplant waiting lists has been tempered by concerns regarding the risks of impaired healing and potential inhibition of liver regeneration in patients immediately after liver transplantation. The article by Frenette and colleagues in *Transplant International* on complications after liver transplantation in patients treated preoperatively with Sorafenib is therefore very timely [1]. This article is interesting from a number of perspectives. In this study, patients received Sorafenib up to the time of transplantation with no break. When Sorafenib was first considered for use in patients before liver transplantation, concerns were raised about its use immediately before surgery. Planning a treatment-free interval in living-donor liver transplantation may be possible, but it would not work in deceased donor transplantation because of the uncertainty of liver availability and the risk of tumour progression during an extended interval. It is reassuring then that the pragmatic approach of giving Sorafenib up to the point of transplantation used in this study was not associated with increased morbidity.

In the current study, the main focus was on complications within 30 days of transplantation, although data on incisional hernias and biliary stricture were collected up to 1 year. Sorafenib is a relatively new drug and the spectrum of complications in the transplant setting is probably not yet known. Our centre has limited experience, but, recently, had a 48-year-old male patient who was treated with sorafenib for an HCC arising on a background of hepatitis C virus-associated cirrhosis Childs B. This patient experienced reduction in size of over 3 cm after 10 months of treatment (Fig. 1). Sorafenib was tolerated well causing only a degree of renal impairment. He went on to have an uncomplicated liver transplant having being treated up until the time of surgery. He made a successful recovery without any early complications; however, 6 months after transplantation, he was admitted as an emergency to another hospital with an intracranial haemorrhage, and subsequently died. It is not known whether his prior treatment with Sorafenib was contributory to his intracranial haemorrhage; however, this is certainly a possibility and highlights the need to consider all complications and over a prolonged period.

Every centre is likely to have a small experience with Sorafenib. Randomized controlled trials seem unlikely for this indication and it will take many years to obtain robust

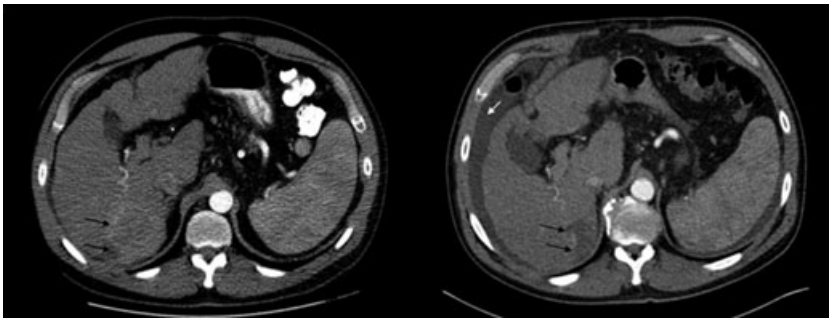

Figure 1 Hepatocellular carcinoma lying in segment six of the liver (arrows) before and after 10 months of treatment with Sorafenib prior to orthotopic liver transplantation.

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experience in the liver transplant population. We recommend the establishment of an International Registry to document outcomes of patients treated with Sorafenib before liver transplantation, ideally on an intention-to-treat basis. This would establish both the efficacy of this drug in maintaining patients with HCC on the liver transplant waiting list as an alternative to current options of transarterial chemoembolization and radiofrequency ablation and would also provide a shared resource of knowledge on the side effects and complications of this drug in this unique population.

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Reference

1. Frenette CT, Boktour M, Burroughs SG, *et al.* Pre-transplant utilization of sorafenib is not associated with increased complications after liver transplantation. *Transpl Int* 2013; **26**: 734.

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