# Medication may improve portal hypertension

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In a new study, a therapeutic agent called sorafenib dramatically improved the condition of rats with portal hypertension. The drug is already approved in several countries for treatment of kidney and liver cancer, and it may be time to consider it for patients suffering from advanced portal hypertension, the authors suggest. Their findings are in the April issue of *Hepatology*, a journal published by John Wiley & Sons on behalf of the American Association for the Study of Liver Diseases (AASLD).

Portal hypertension is the most significant complication for patients with liver cirrhosis. It can become serious and life-threatening, and we do not have many effective ways to treat it. Researchers have considered antiangiogenic drugs, which inhibit the growth of new blood vessels, since such vascular formation is a hallmark of portal hypertension, as they have previously demonstrated. One such drug is sorafenib, a powerful multikinase inhibitor that can be taken orally.

Researchers, led by Mercedes Fernandez from the Institute of Biomedical Research IDIBAPS of Barcelona, examined the effects of sorafenib on rats with portal hypertension induced by partial portal vein ligation or bile duct ligation.

"Our present study is the first to determine if the multiple kinase inhibitor sorafenib causes beneficial effects on the splanchnic, intrahepatic and systemic circulations, and on portosystemic collateral vessels in two different experimental models of portal hypertension," they report.

The rats in the study took sorafenib orally every day for two weeks. They showed no signs of toxicity or adverse effects and the researchers noted numerous improvements in their condition. They had an 80 percent decrease in the growth of new blood vessels and marked lessening of circulation in the areas around the liver. The treatment also decreased portal pressure by 25 percent, and liver fibrosis and inflammation improved.

"Taking into account the limitations of translating animal study results into humans, we believe that our findings will be stimulating for consideration of sorafenib as an effective therapeutic agent in patients suffering from advanced portal hypertension," the authors conclude.

An accompanying editorial by Vijay Shah of the Mayo Clinic and Jordi Bruix of Barcelona notes the promise of the findings by Mejias and colleagues. "It is obvious that a new avenue for pharmacologic intervention in patients with cirrhosis has emerged," they write.

They encourage the evaluation of antiangiogenesis therapy in patients with cirrhosis and portal hypertension, though saying it "will need a very careful approach." Researchers will have to determine the optimal dosage that maintains efficacy while remaining tolerable and safe for patients. They must also consider the impact on cardiac function.

"The challenge is there and it is time to move ahead," Shah and Bruix conclude.

More information:

Article: "Beneficial Effects of Sorafenib on Splanchnic, Intrahepatic and Portocollateral Circulations in Portal Hypertensive and Cirrhotic Rats." Mejias, Marc; Garcia-Pras, Ester; Tiani, Carolina; Miquel, Rosa; Bosch, Jaime; Fernandez, Mercedes. Hepatology; April 2009.

Editorial: "Antiangiogenic Therapy: Not Just for Cancer Anymore." Shah, Vijay; Bruix, Jordi. Hepatology; April 2009.

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