Researchers find a promising new approach for treating liver cirrhosis
18 June 2018

Gastroenterology and Hepatology, Department of Medicine of the National Yang-Ming University School of Medicine, Taiwan. "Nonselective beta-blockers, which lack splanchnic and intestinal effects, have been the mainstay of drug therapy for PH but are limited by their potential for adverse effects. We have found that a newly developed PPAR?/? agonist, aleglitazar, is able to suppress the inflammation, angiogenesis, tissue damage, and fibrosis associated with cirrhosis in the splanchic, intestinal, as well as the hepatic circulations of cirrhotic rats with PH syndrome."

Cirrhosis of the liver is a serious condition in which the liver is permanently scarred, often as a result of liver disease, hepatitis C virus, or alcohol or drug use. Liver cirrhosis was the 12th leading cause of death in the United States in 2013, and between 2000 and 2015, death rates for chronic liver disease and cirrhosis in the US increased by 31 percent. Cirrhosis is the most common cause of PH and can result in fluid accumulation (ascites), increased spleen size, and swollen veins around the esophagus and intestines.

Researchers found that treatment with aleglitazar for 21 days produced a number of beneficial changes in cirrhotic rats. In the liver, aleglitazar suppressed hepatic fibrogenesis, neoangiogenesis, and vasoconstrictor responsiveness. In the splanchic system, aleglitazar reduced neoangiogenesis, vasodilatation, and portosystemic shunts. It also decreased intestinal mucosal injury and hyper-permeability.

The dual composition of aleglitazar appears to expand its effectiveness. PPAR? is activated in the liver, PPAR? is activated in the intestine, and both PPAR? and PPAR? mediate effects in the splanchic system.

"We know that PH in patients with cirrhosis is primarily initiated through increased levels of circulating soluble TNF receptors and TNF-?.
Overall, the therapeutic effects of aleglitazar can be attributed to its anti-inflammatory and anti-TNF-α actions," explained Dr. Yang. "Our findings as a whole imply that treatment with a dual PPAR?/? agonist may be a promising approach to simultaneously control the multifaceted abnormalities of PH syndromes in cirrhosis with a low side effects profile."