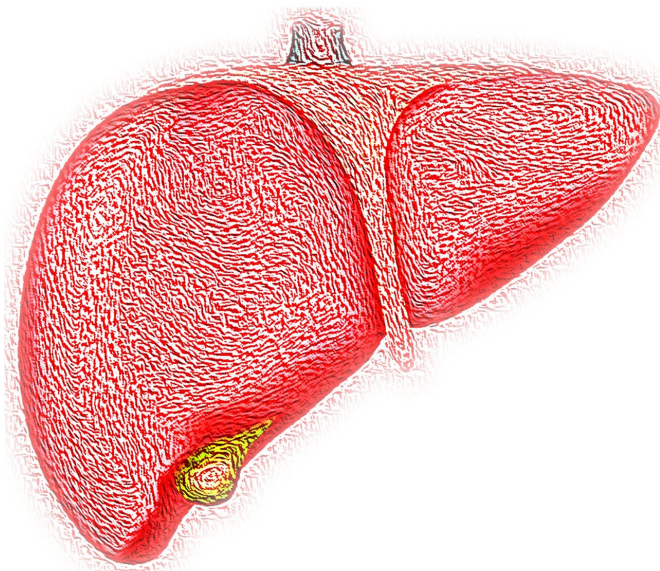


Beta-blockers display anti-inflammatory effects in advanced liver disease

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Approximately 170,000 people die every year in Europe from the direct consequences of advanced chronic liver disease (cirrhosis). In Austria, cirrhosis of the liver is usually due to a fatty liver resulting from excessive alcohol consumption or overeating and/or poor diet and—thanks to effective antiviral therapies—less common due to viral hepatitis.

Chronic liver damage leads to scarring (fibrosis) of the liver tissue, which can ultimately lead to increased [blood pressure](#) in the vascular system of the gastrointestinal tract (i.e. portal hypertension).

Portal hypertension can result in serious complications such as ascites and variceal bleeding. A paper recently published by Thomas Reiberger's research group at MedUni Vienna has already shown that increasing severity of portal

hypertension is paralleled by inflammatory reactions in the body ([systemic inflammation](#)). Pronounced systemic inflammation may ultimately trigger the development of serious complications, such as acute-on-chronic liver failure.

Beta-blocker treatment and portal vein pressure measurement at MedUni Vienna

For many years, beta-blockers have been used as a standard drug treatment but only 50% to 60% of patients achieve a clinically relevant reduction in portal vein pressure. It is therefore necessary to assess the hemodynamic response invasively by means of hepatic vein catheterisation. Over the last few years, [beta-blocker](#) therapy and the invasive technique of hemodynamic measurements have been continuously optimized in the Vienna Hepatic Haemodynamic Laboratory at the Division of Gastroenterology and Hepatology of the Department of Medicine III of MedUni Vienna and Vienna General Hospital. Head of the Vienna Hepatic Haemodynamic Laboratory, Thomas Reiberger, explains: "We use portal pressure measurements to ensure that our patients with liver cirrhosis receive both best diagnosis and effective beta-blocker therapy."

Anti-inflammatory effects of beta-blockers in cirrhosis

The recently published study shows for the first time that beta-blockers also have an impact on systemic inflammation. For this study, the researchers determined biomarkers of systemic inflammation prior to and subsequently during ongoing treatment with beta-blockers. This showed that patients suffering from advanced stages of cirrhosis were not only more likely to display a pronounced systemic inflammatory response but were also more likely to benefit from the anti-inflammatory effects of beta-blockers. It was observed that cirrhotic patients who achieve a relevant reduction in inflammatory markers (such

as the white blood cell count) under beta-blocker therapy developed significantly fewer complications of [portal hypertension](#) and had a lower risk of [liver](#)-related mortality.

"After further validation in [clinical trials](#), these promising data may help us to predict the individual benefit of beta-blocker treatment more accurately and thus to give our patients optimal advice regarding their prognosis and other treatment options," explains Mathias Jachs, who was mainly responsible for the study as lead author. The study findings were published in the journal *Gut*, one of the leading international journals in the field of gastroenterology and hepatology.

More information: Mathias Jachs et al, Amelioration of systemic inflammation in advanced chronic liver disease upon beta-blocker therapy translates into improved clinical outcomes, *Gut* (2020). [DOI: 10.1136/gutjnl-2020-322712](https://doi.org/10.1136/gutjnl-2020-322712)

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