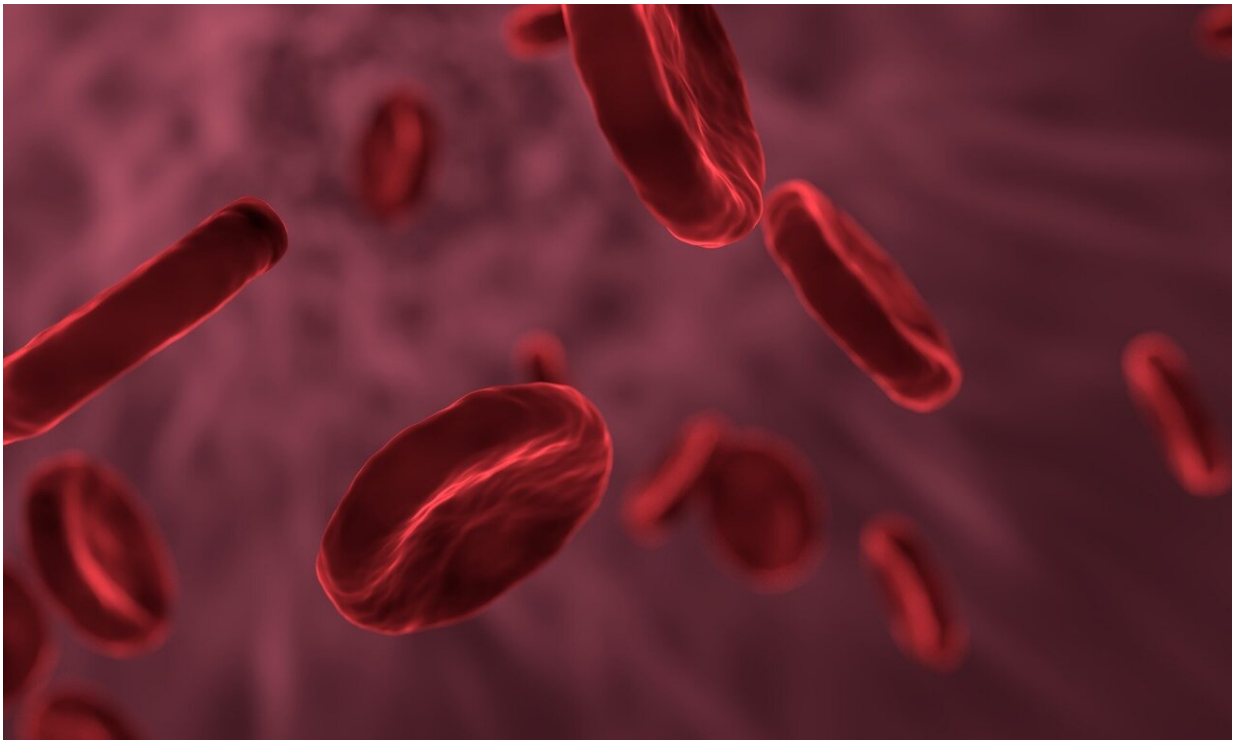


# Study reveals the impact of systemic inflammation on disease progression

November 30 2020, by Johannes Angerer

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Every year, liver cirrhosis is responsible for approximately 170,000 deaths in Europe and recent epidemiological data show Austria to be in second place in regard to prevalence of cirrhosis in Europe. Excessive alcohol consumption, poor dietary habits, and metabolic comorbidities are the most common causes of cirrhosis in the Western world.

Liver [cirrhosis](#) is characterized by chronic liver damage, which leads to fibrosis and loss of functioning liver tissue. These changes to the liver tissue result in increased resistance to the [blood flow](#) to the liver via the [portal vein](#) and cause so-called '[portal hypertension](#).' In addition, experimental studies have shown that the intestinal barrier is weakened in cirrhosis, so that pathogenic germs and bacterial products can pass into the bloodstream and cause a chronic inflammatory response in the body, in other words 'systemic inflammation.' All these factors drive the progression of the liver disease, which can manifest clinically as the transition from asymptomatic (compensated) to symptomatic (decompensated) cirrhosis. This goes hand-in-hand with an [increased risk](#) for death.

In the recent MedUni Vienna study, portal vein pressure measurements were performed in nearly 170 patients, while simultaneously taking a blood sample to determine biomarkers for systemic inflammation. "Portal pressure measurement via hepatic vein catheterisation is currently the gold standard for assessing the severity of portal hypertension," explains Thomas Reiberger, head of the outpatient clinic for [liver cirrhosis](#) and the Vienna Hepatic Hemodynamic Laboratory at University Hospital Vienna. "At MedUni Vienna, we have established one of the largest hepatic hemodynamic laboratories in the world and are therefore able to offer this valuable prognostic test at our center at the University Hospital Vienna, in order to optimize the treatment of our patients with cirrhosis."

## **Inflammation as a significant disease mechanism and prognostic factor**

New findings produced by the study show that the severity of portal hypertension increases predominantly in patients with asymptomatic (compensated) cirrhosis, while biomarkers for systemic inflammation

increase predominantly in more advanced (decompensated) stages of the disease. Interleukin-6, a biomarker for inflammation, can predict the risk of complications and mortality both in compensated and decompensated cirrhosis. "These data underline the significance of systemic inflammation for the course of cirrhosis. The mechanisms underlying the inflammatory signals and potential interactions of the gut and the liver need to be further elucidated in humans," observes Simbrunner. The study has been published in the *Journal of Hepatology*.

**More information:** Dalila COSTA et al. Systemic inflammation increases across distinct stages of advanced chronic liver disease and correlates with decompensation and mortality, *Journal of Hepatology* (2020). DOI: [10.1016/j.jhep.2020.10.004](https://doi.org/10.1016/j.jhep.2020.10.004)

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