Acute-on-Chronic Liver Failure: Biomarker Can Predict Mortality

Researchers from Aarhus University Hospital and Aarhus University in Denmark have found that the biomarker CD163 can predict mortality in patients with acute-on-chronic liver failure (ACLF). The study is published in the *Journal of Hepatology*.

Acute-on-chronic liver failure (ACLF) is a syndrome found in liver cirrhosis patients, when liver function suddenly worsens and is accompanied by failure of one or more organ systems. ACLF's mortality rate is 20-30% at 4 weeks and 50-70% at six months. The syndrome can be triggered by bleeding, an infection or other stressful events. Prognostic scores were developed by the Chronic Liver Failure Consortium (CLIF-C) for ACLF and for acute decompensation, and are based on standard clinical and biochemical data. Biomarkers were investigated as they may improve the predictive abilities of these scores.

Macrophages are immune system cells, widely represented in the liver, that play an active role in inflammation and formation of scar tissue in the liver. The researchers measured the circulating macrophage activation markers soluble sCD163 and mannose receptor (sMR) and related them to the short- (1–3 months) and long-term (6 months) mortality in the cirrhosis patients of the CANONIC study. The protein CD163, together with the mannose receptor, can be measured in a blood sample.

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Both sCD163 and sMR were independently associated with short and long-term mortality and showed equal or higher predictive accuracy than the Model for End-Stage Liver Disease (MELD), the Chronic Liver Failure Consortium CLIF-C ACLF and CLIF-C Acute Decompensation score.

The researchers conclude: "The severity-related increase in sCD163 and sMR and close association with mortality suggest a primary importance of inflammatory activation of liver macrophages in the emergence and course of ACLF. Accordingly, supplementation of the macrophage biomarkers to the platform of the clinical scores improved the prognostic performance beyond that of the original scores."

This new knowledge can lead to improved diagnostics in patients with liver disease and possibly direct treatment towards macrophages via CD163 in the future, says Henning Grønbæk, professor and consultant at Department of Hepatology and Gastroenterology at Aarhus University Hospital.

Source: Eurekalert
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