Discovery Could Change Direction of Treatment of Liver Disease

The primary cause of liver disease progression may not be what researchers had previously thought.

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Researchers from the Walter and Eliza Hall Institute (WEHI) have discovered that inflammatory cell death may not drive the progression of common liver diseases such as hepatitis B and non-alcoholic fatty liver disease, contradicting previously held scientific beliefs.

Published in Gastroenterology, the researchers' findings reveal that liver cells cannot undergo necroptosis, an inflammatory form of cell death. This discovery will be integral in the development of new treatments for liver diseases.

Liver diseases affect a significant proportion of the world's population. For example, non-alcoholic fatty liver disease, the most common liver disease, affects 30% of people worldwide. Similarly, over 296 million people worldwide are living with hepatitis B.

The findings challenge the idea that necroptosis is critical in the advancement of these diseases. Until now, it was unclear where this type of cell death occurred—either in liver cells or in immune cells in the liver acting in response to infections or damage.

"We sought to address this research gap and define the role and relevance of necroptosis in common liver diseases," said lead study author Marcel Doerflinger, PhD, in a WEHI article.

For the study, researchers removed essential genes from liver cells called hepatocytes in genetic models of liver diseases to monitor any changes in disease progression. Results showed that removing these genes had only a minor impact, which suggests necroptosis was not the driver of lover disease progression.

"These findings are a central piece of data that address many unanswered questions in the field that will guide future pr-clinical trials and clinical studies in this direction," Doerflinger said.

Editor's note: This article has been updated.
