Amino acid connected to NAFLD could provide treatment clues

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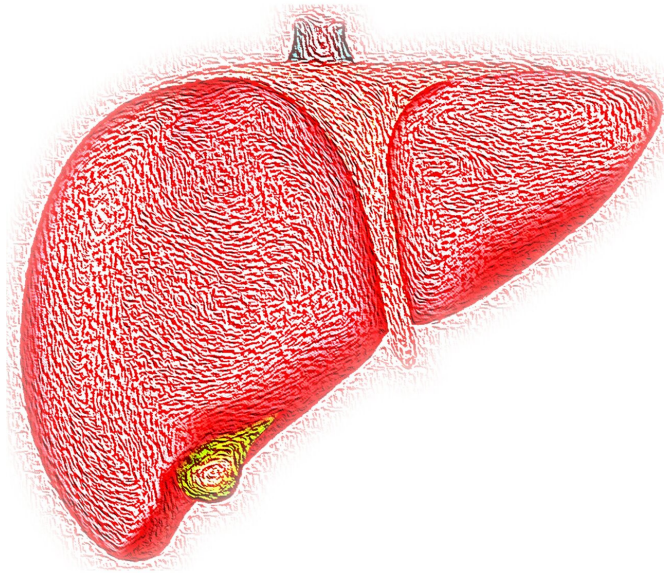

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A new study further implicates low levels of the amino acid glycine in development of nonalcoholic fatty liver disease, or NAFLD. It also suggests addressing this might hold the key to a future treatment for the disease.

"We've uncovered a new metabolic pathway and potential novel treatment," says senior author Y. Eugene Chen, M.D., Ph.D., a professor of internal medicine and surgery, from the Michigan Medicine Frankel Cardiovascular Center. His team collaborated with researchers from the University of Michigan, Wayne State University and Technion-Israel Institute of Technology.

Chen says there is a large need to expand treatment options for patients with NAFLD. Although it's the most common chronic liver disease, there are currently no approved drugs to treat it.

Lead author Oren Rom, Ph.D., R.D., a research fellow at the Michigan Medicine Frankel Cardiovascular Center, says the team focused on the poorly understood relationship between dysregulated amino acid metabolism and NAFLD.

"In particular, lower circulating glycine is consistently reported in patients with NAFLD and related comorbidities including diabetes, obesity and cardiovascular diseases," Rom says. "Our studies not only offer a metabolic explanation for defective glycine metabolism in NAFLD, but also uncover a potential glycine-based treatment."

The researchers were able to improve body composition and several other measures in mouse models using a tripeptide known as DT-109.

"Glycine-based treatment attenuates experimental NAFLD by stimulating hepatic fatty acid oxidation and glutathione synthesis, thus warranting clinical evaluation," the authors write.

More information: Oren Rom et al, Glycine-based treatment ameliorates NAFLD by modulating fatty acid oxidation, glutathione synthesis, and the gut microbiome, *Science Translational Medicine* (2020). DOI: 10.1126/scitranslmed.aaz2841

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