

Team finds likely culprit behind liver problems linked to intravenous feeding

October 9 2013

Researchers know that feeding some patients intravenously can save their lives – but also can cause liver damage. Now scientists at the University of Colorado and Children's Hospital Colorado have figured out the likely culprit, one of the ingredients in intravenous food, behind the liver problems.

The discovery, published Oct. 9 in *Science Translational Medicine*, could point the way to better treatments for patients who are medically vulnerable and, often, very young.

"We still have more to learn about the optimal mix of lipids for intravenous nutrition," said Ron Sokol, part of the research team. "Our hope is that this study will lead us to intravenous nutrition that results in less stress on the [liver](#)."

A life-saving option for some patients with intestinal problems or pancreatitis is to provide food intravenously. But this option, usually used for patients who can't tolerate or absorb food from their intestines, is associated with [liver damage](#) while helping in other ways.

The risk is especially high for premature infants and children with intestinal failure or short bowel syndrome, who often depend on intravenous feeding – or Parenteral nutrition (PN)—for years. The longer a patient is on PN and the more severe their intestinal problems, the greater the risk of what is called PN-associated liver disease (PNALD).

Clinical evidence had suggested that lipids derived from [soy](#) might be part of the problem. The researchers, also representing University of Cincinnati, Cincinnati Children's Hospital and Emory University, zeroed in on the soy factor.

They found that one derivative of soy – called stigmaterol – appeared to prevent the flow of bile from the liver in experimental mice. They also figured out the chemical mechanism behind that problem, and found that microbes in the gut appeared to contribute to PNALD as well.

"The results of this study may help promote a shift away from solutions containing stigmaterol for [patients](#) dependent on intravenous nutrition," Sokol said.

More information: "Phytosterols Promote Liver Injury and Kupffer Cell Activation in Parenteral Nutrition–Associated Liver Disease," by K.C. El Kasmi et al. *Science Translational Medicine*, 2013.

Provided by University of Colorado Denver

Citation: Team finds likely culprit behind liver problems linked to intravenous feeding (2013, October 9) retrieved 21 November 2023 from <https://medicalxpress.com/news/2013-10-team-culprit-liver-problems-linked.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--