

Gut microbiota may play a role in the development of alcoholic liver disease

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Exciting new data presented today at the International Liver Congress 2014 shows that the gut microbiota has a potential role in the development of alcoholic liver disease (ALD).¹ Though an early stage animal model, the French study highlights the possibility of preventing ALD with faecal microbiota transplantation – the engrafting of new microbiota, usually through administering human faecal material from a healthy donor into the colon of a recipient.²

In the study, two groups of germ-free mice received gut microbiota transplants from human representatives; one set from a patient with severe alcoholic hepatitis, the other from a patient with a history of alcohol abuse but without alcoholic hepatitis. The two sets of germ-free mice were then fed a liquid alcoholic diet.

The group that received microbiota from the patient with severe alcoholic hepatitis developed a more severe liver injury and a higher disruption of the intestinal mucosa in direct comparison to the group that received microbiota from the patient without severe alcoholic hepatitis. The study also identified two *Clostridium* bacteria that were able to produce ethanol in vitro and that were systematically associated with intestinal microbiota associated liver injury.

EASL Scientific Committee Member Prof. Frank Lammert commented: "Among heavy drinkers, the severity of alcoholic [liver disease](#) does not strictly correlate with the amount of alcohol intake, meaning that other factors must be influencing its development."

"These findings provide first evidence for a causal role of [gut microbiota](#) in alcohol-induced inflammation, and open up new avenues for the treatment of [alcoholic liver disease](#) with potentially better patient outcomes." At present, intestinal microbiota is considered to constitute a "microbial organ": one that has pivotal roles in the body's metabolism as well as immune function. Therefore transplantation aims to restore gut functionality and re-establish the homeostasis of intestinal flora.

The study was developed by an INRA-Micalis and INSERM/Paris-South University/Antoine-Béclère hospital collaboration.

More information: 1. M. Llopis et al. INTESTINAL DYSBIOSIS EXPLAINS INTER-INDIVIDUAL DIFFERENCES IN SUSCEPTIBILITY TO ALCOHOLIC LIVER DISEASE. Abstract presented at the International Liver Congress 2014

2. Khoruts A and Sadowsky MJ, Therapeutic transplantation of the distal gut microbiota. *Mucosal Immunology* 2011; 4: 4-7

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