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# 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 homoestasis 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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