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Fecal microbiota transplants improve cognitive impairment caused by severe liver disease

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A study presented today found that faecal transplantation of bacteria from one healthy donor into patients that suffer from hepatic encephalopathy (decline in brain function due to severe liver disease), is safe and improves cognitive function compared with standard of care treatment for the condition. Presented at The International Liver Congress 2017 in Amsterdam, The Netherlands, the study results also demonstrated that the number of hospitalisations following faecal transplantation plus antibiotics was two, compared to the standard of care arm (lactulose and rifaximin), which was 11 (IQR 83 days). Specifically, there was a significant reduction in hospitalisations due to recurrent hepatic encephalopathy (six in the standard of care and none in the faecal transplant arm).

In the study, faecal transplant plus antibiotic treatment was well tolerated without any serious side effects. Furthermore, it was found that the faecal transplant plus antibiotic therapy restored antibiotic-associated changes in the body's bacterial composition.

"Hepatic encephalopathy is a serious condition and a leading cause of re-admission to hospital due to recurrence, despite standard of care treatment," said Dr Jasmohan Bajaj, Virginia Commonwealth University, Richmond, United States of America, and lead author of the study. "The results from this study demonstrate that in patients with hepatic encephalopathy, a faecal transplant improves brain function

more than standard of care as well as reducing the number of hospital admissions, including those for recurrent hepatic encephalopathy. Faecal transplantation is an innovative and promising approach to treat this condition, and we look forward to more studies being conducted to confirm our results."

Researchers randomised 20 men with cirrhosis who experienced recurrent episodes of hepatic encephalopathy prior to the start of the study, to treatment with lactulose and rifaximin (standard of care treatment), or, broad spectrum antibiotics for five days plus a single faecal transplant from a healthy donor along with continuing the standard of care. The transplant was given as an enema. Patients were followed for up to 150 days after randomisation.

There was significant cognitive improvement in the faecal transplant group on the Psychometric Hepatic Encephalopathy Score (PHES) and the Stroop App (another test of cognitive dysfunction) as compared to the standard of care group. The Model for End Stage Liver Disease (MELD) score significantly increased following treatment with antibiotics (delta 1.7, p

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