The gut microbiome in MASLD

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IBD | Gut Microbiota

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The gut microbiome is a key driver of metabolic liver disease through mechanisms including loss of bacterial diversity, production of toxic metabolites and endogenous ethanol, and disruption of short chain fatty acid and bile acid pathways.

KEY POINTS

- In metabolic liver disease, the speaker stated that loss of bacterial diversity occurs with dominant populations of E coli, Enterobacter, and Klebsiella producing toxic products that drive steatosis, inflammation, and liver injury.
- The speaker reported that 61% of people with metabolic liver disease have high alcohol-producing Klebsiella compared to 6% of healthy individuals, and gut microbial ethanol production is an important disease driver.
- Diet is the most important determinant of gut microbial health, and dietary fibres fermented by gut bacteria produce short chain fatty acids that promote intestinal barrier integrity and support host metabolism.
- No large randomised controlled trial has examined probiotics versus placebo in metabolic liver disease; the speaker stated that the Insight trial with Bifidobacterium and fructo-oligosaccharides showed gut microbiome changes but no improvement in liver fat or fibrosis markers.
- The speaker is conducting a UK trial enrolling 300 patients receiving FMT capsules every 90 days for two years, examining hard clinical endpoints including infections and decompensation events, with 178 patients recruited to date.
- The speaker recommended dietary approaches as the most practical strategy to target the gut microbiome in metabolic liver disease, though precision approaches selecting treatments based on individual microbial profiles may be needed.

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