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***Clostridium*-enriched enterotype contribute to bile acid oversynthesis in patients with diarrhea-predominant irritable bowel syndrome**

Bile acid (BA) overexcretion, strongly linking with the severity of bowel symptoms, affects a considerable population of diarrhea-predominant irritable bowel syndrome (IBS-D). Some genetic and metabolic mechanisms derived from the host have been documented, however the role of gut microbiota has received little attention. To investigate gut microbiota and its effect on BA metabolism in IBS-D, a series of metabolic and microbial experiments were performed from bedside to bench. Fecal metagenomic analysis identified a specific enterotype characterized by enrichment of *Clostridium* in IBS-D cases with BA overexcretion. Abundant *Clostridium* species showed positive association with human fecal total BA and serum C4 levels, but reversely correlated with serum FGF19. Further, mouse experiments with bacterial manipulation found that enrichment of *Clostridium* species in the cecal lumens leads to elevation of fecal total BA level and taurine-conjugated BA contents in the liver and ileal contents, along with differential expressions of hepatic BA synthetase CYP7A1 and ileal feedback regulator FGF15. Mechanistic analyses revealed such microbiota-driven BA synthetic dysregulation is involved in inhibition of FXR-mediated feedback signaling. This study discloses the potential contribution of *Clostridium*-enriched enterotype in BA overexcretion in IBS-D and also suggest the importance of enterotype classification in pathogenesis and diagnosis for IBS.

Biography

Prof Bian Zhaoxiang had been educated in Nanjing University of Traditional Chinese Medicine (TCM), Beijing University of TCM and Guangzhou University of TCM; and was conferred the Ph.D. degree in Integrated Chinese and Western Medicine in 1994. Currently, he is the Associate Vice-President, Chair Professor of School of Chinese Medicine, Director of Clinical Division and Associate Director of Institute of Creativity of Hong Kong Baptist University. He is also the Honorary Professor of the Shanghai University of TCM, and the Chinese Academy of Chinese Medical Sciences, China. Prof. Bian's research focuses mainly on the relationship between psychological stress and digestive diseases, especially on colorectal cancer irritable bowel syndrome (IBS) and inflammatory bowel disease (IBO) and related new drug discovery and clinical trial design, implementation and reporting with Chinese Medicine.

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