Bile acids in IBD

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Bile acids exhibit immunomodulatory functions and play a key role in gut barrier maintenance, with serum and fecal secondary bile acid levels decreased in active IBD, suggesting potential therapeutic applications.

KEY POINTS

- Serum secondary bile acids including deoxycholic acid, taurodeoxycholic acid, and glycodeoxycholic acid are decreased in ulcerative colitis and Crohn's disease, with two studies published this year showing substantially decreased plasma and fecal concentrations in active disease.
- Secondary bile acids exert anti-inflammatory effects mainly via the TGR5 receptor by suppressing NF-kappa-B and pro-inflammatory cytokine synthesis, and promote tolerogenic responses by inducing regulatory T cells and suppressing Th17 inflammation.
- In a preclinical CD4 adoptive transfer mouse model, 24-nor-ursodeoxycholic acid substantially suppressed intestinal inflammation through induction of regulatory T cells and suppression of Th17 responses.
- Around 2000 bile acids exist and various intestinal bacteria including Clostridia, Bacteroides, bifidobacteria, and lactobacilli participate in generating secondary bile acids, with disrupted bile acid-transforming microbial functions potentially contributing to IBD pathophysiology.
- The speaker noted that bile acids have not been studied prospectively in IBD patients despite preclinical evidence of immunomodulatory functions, and suggested they could potentially be studied in mild disease or for maintaining remission.

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