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Summary

A MULTI-OMICS ANALYSIS REMINDS THE RELATIONSHIP AMONG GUT MICROBIOTA, BILE ACID METABOLISM, AND THE DISORDER OF INTESTINAL BARRIER FUNCTION IN CROHN'S DISEASE

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UEG Week Vienna 2024 | Poster

IBD

October 13, 2024

A prospective case-control study using multi-omics analysis found that Crohn's disease patients have distinct gut microbiota and bile acid profiles associated with disease activity, intestinal barrier damage, and elevated inflammatory markers.

KEY POINTS

- CD patients in the active phase showed decreased beneficial bacteria (including Romboutsia), reduced secondary bile acid production, increased bile acid profile variation, and altered primary-to-secondary bile acid ratios compared with patients in remission and healthy controls.
- Active CD patients had significantly elevated proinflammatory cytokines including FC, ESR, CRP, and HBP (all $P < 0.001$), and higher IL-6 ($P < 0.001$), IL-8 ($P = 0.005$), IL-10 ($P = 0.04$), and IL-1β ($P = 0.044$) compared with remission patients.
- Both physical and mucosal intestinal barriers were damaged in association with disease activity.
- The authors suggest that CD occurrence and development may involve interactions between gut microbiota and bile acid metabolism leading to immune responses and intestinal barrier damage, and propose that targeting the gut microbiota-bile acid axis might be important for repairing intestinal barrier function and treating CD.

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