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Summary

METABOLOMIC PROFILING FOR IBD DIAGNOSIS: SEARCH FOR OPTIMAL SETS OF METABOLOMIC IBD MARKERS

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A metabolomic study using HPLC-MS/MS and GC-MS/MS identified potential serum and stool markers for inflammatory bowel disease verification and differentiation between Crohn's disease and ulcerative colitis.

KEY POINTS

- Analysis of 160 serum and stool samples from CD and UC patients identified isovaleric acid in stool as a marker for IBD, with the ratio of valeric to isovaleric acids enabling calculation of IBD development risk using logistic regression.
- Quantitative differences in serum hydrophilic metabolites including O-Acetyl-L-carnitine, Sphingosine, Nicotinamide, Phenylalanine, Isoleucine, Choline chloride, Proline, and bile acids contributed to IBD verification, with O-Acetyl-L-carnitine specifically contributing to differentiation between CD and UC.
- Three lipid markers were detected exclusively in CD samples: Cer 37:0;3O, PE P-36:2, and PC 36:2.
- The authors conclude that the metabolomic differences in hydrophilic fraction and volatile components enable reliable verification of inflammatory bowel diseases, while specific lipid markers and O-Acetyl-L-carnitine contribute to CD detection.

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