# DIAGNOSIS METHODS FOR INFLAMMATORY BOWEL DISEASES USING THE FECAL, HEMATOLOGICAL, SEROLOGICAL INDICATORS, FATTY ACIDS' LEVELS OF ERYTHROCYTE MEMBRANES, AND BLOOD SERUM

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**Researchers developed two machine learning diagnostic models for inflammatory bowel disease using combinations of hematological markers, fecal calprotectin, and fatty acid levels, reporting high sensitivity and specificity for distinguishing IBD from healthy controls and for differentiating ulcerative colitis from Crohn's disease.**

## KEY POINTS

- The first diagnostic model distinguished IBD patients from healthy individuals with AUC 0.957, sensitivity 0.974, and specificity 0.941 using hemoglobin, sedimentation rate, ferritin, fecal calprotectin, and multiple fatty acid measurements including oleic acid, polyunsaturated fatty acids, and arachidonic acid in erythrocyte membranes and serum.
- The second model differentiated acute ulcerative colitis from active Crohn's disease with AUC 0.887, sensitivity 0.993, and specificity 0.840 using hemoglobin, hematocrit, mean corpuscular volume, ESR, C-reactive protein, ferritin, fibrinogen, fecal calprotectin, and erythrocyte oleic acid levels.
- The study examined 91 IBD patients (50 with ulcerative colitis, 41 with Crohn's disease) and 53 comparison group patients, measuring parameters by standard methods, ELISA for fecal calprotectin, and gas chromatography-mass spectrometry for fatty acids.
- Between 5% and 15% of IBD cases do not meet strict criteria for either ulcerative colitis or Crohn's disease, and diagnosis can change over time in 14% of patients, as there is no unified gold standard for IBD diagnosis.

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