

EXPLAINABLE ARTIFICIAL INTELLIGENCE PREDICTING REFRACTORY ULCERATIVE COLITIS AT FIRST VISIT: ANALYSIS OF A JAPANESE NATIONAL DATABASE FROM BEFORE THE SPREAD OF BIOLOGICS

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Explainable artificial intelligence applied to a Japanese national ulcerative colitis database identified female sex, positive stool culture, colonic mucosal abnormalities, and right-sided colonic lesions as predictors of steroid resistance.

KEY POINTS

- Analysis of 4,003 Japanese patients with moderate-to-severe ulcerative colitis registered between 2003 and 2011 used a point-wise linear model to predict steroid resistance at first visit, achieving an AUC of 0.628 for the training set and 0.627 for the test set.
- Female sex, positive stool culture, and colonic mucosal abnormalities showed strong associations with steroid resistance in both patient clusters.
- The steroid-resistant group showed higher weights for pseudopolyposis, caecal lesions, CRP, ascending colon lesions, and transverse colon lesions.
- White blood cell count, defecation frequency, bloody stool, stool form, and abdominal pain were not significantly related to steroid resistance in either group.
- This work may be of interest to gastroenterologists managing ulcerative colitis in settings where early identification of steroid-resistant patients could inform treatment escalation decisions.

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