Abstract IDDF2021-ABS-0090 Table 1 Evaluate constipation symptoms according to ROME IV criteria

Symptoms	n	%
Fewer than three spontaneous bowel movements per week	24	57.1
Straining for more than 25% of defecation attempts	36	85.7
Lumpy or hard stools for at least 25% of defecation attempts	31	73.8
Sensation of anorectal obstruction or blockage for at least 25% of defecation attempts	33	78.6
Sensation of incomplete defecation for at least 25% of defecation attempts	34	81.0
Manual maneuvering required to defecate for at least 25% of defecation attempts	32	76.2

Abstract IDDF2021-ABS-0090 Table 2 Evaluate symptoms according to Wexner score

Symptoms	With symptoms		Without symptoms	
	n	%	n	%
Decreased frequency of bowel movements	18	42.9	24	57.1
Duration of constipation more than 1 year	2	4.8	40	95.2
Difficulty/painful evacuation effort	1	2.4	41	97.6
Completeness: feeling incomplete evacuation	8	19.0	34	81.0
Abdominal pain	20	47.6	22	52.4
Assistance	10	23.8	32	76.2
Lavatory attempts lasting more than 5 minutes	4	9.5	38	90.5
Failure: unsuccessful attempts for evacuation per 24 hours	20	47.6	22	52.4

Abstract IDDF2021-ABS-0090 Table 3 Wexner score in patients with functional constipation FC and subgroups

Symptoms	FC	Anismus	Rectocele	Rectal prolapse
Decreased frequency of bowel movements	1.0±1.1	1.3±1.2	0.7±0.9	1.0±1.1
Duration of constipation more than 1 year	1.7±1.0	1.3±0.9	2.0±1.1	1.9±0.9
Difficulty/painful evacuation effort	2.9±0.8	3.1±0.6	2.9±0.8	2.8±1.0
Completeness: feeling of incomplete evacuation	2.2±1.2	1.9±1.4	2.7±0.8	2.2±1.2
Abdominal pain	1.1±1.2	0.8±0.9	1.3±1.3	1.0±1.3
Assistance	1.4±0.9	1.3±0.9	1.7±0.7	1.5±0.8
Lavatory attempts lasting more than 5 minutes	2.3±1.3	2.4±1.4	2.4±1.3	2.3±1.3
Failure: unsuccessful attempts for evacuation per 24 hours	0.7±0.9	0.8±0.9	0.8±1.0	0.9±1.1
Sum	13.3±4.0	12.7±3.1	14.4±4.0	13.5±4.6

Abstract IDDF2021-ABS-0090 Table 4 Results of magnetic resonance defecography

Results of MR defecography	Male		Female		Sum		P
	n	%	n	%	n	%	
Rectal prolapse	3	23.1	10	76.9	13	100	>0.05
Rectocele	1	4.2	23	95.8	24	100	<0.001
Anismus	7	43.8	9	56.2	16	100	<0.05
Bladder prolapse	1	5.9	16	94.1	17	100	<0.05
Uterus prolapse			11	100	11	100	

ABS-0090 Table 3). The mean Wexner score in the group with rectocele was the highest at 14.4±4.0 (IDDF2021-ABS-0090 Table 3).

Conclusions The Wexner score is a simple and easy to apply clinical scale which helps to evaluate subgroups of functional constipation. Magnetic resonance defecography is useful in evaluating structural and functional abnormalities in patients with functional constipation.

IDDF2021-ABS-0091

PREDICTING EFFICACY OF FECAL MICROBIOTA TRANSPLANTATION FOR CROHN'S DISEASE BASED ON CLINICAL FACTORS AND METABOLOMICS

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Background Fecal microbiota transplantation (FMT) can effectively induce remission in a part of patients with Crohn's disease (CD). We aimed to establish machine learning models using clinical characteristics and serum metabolomics to predict the efficacy of FMT in patients with CD.

Methods Patients with active CD were enrolled. The baseline serum metabolic profiles, clinical characteristics of those subjects were evaluated. Patients with a Harvey-Bradshaw Index (HBI) ≤ 4 after FMT were classified as remission group, while others were assigned to non-remission group. Identified the differential clinical characteristics and metabolites between the groups before FMT, then constructed random forest (RF) models with variables selected by Boruta method to predict the efficacy.

Results Overall, 86 patients were included for analysis, with 54.65% of them achieved remission at three-month after FMT. Patients with penetrating CD, perianal disease, high HBI, low body mass index (BMI) and family history had a lower possibility to respond to FMT ($p < 0.05$). There were 148 baseline serum metabolites significantly different between the two groups ($p < 0.05$). We constructed RF classifiers using the most discriminatory clinical or metabolic factors, respectively, with the corresponding area under the curve (AUC) of 0.85 and 0.88. The RF model combined clinical characteristics and metabolites had better predictive performance (AUC = 0.95). Specially, two clinical factors (Behavior B3, B1) and seven metabolites (MMSucc; 4-(1-Methylethyl)-2,6-dinitro-N,N-dipropylbenzenamine; cefetamet; N-phenylacetylglutamine (pos); diisodecyl phthalate; N-phenylacetylglutamine (neg); eucommia) were commonly selected features across the three models.

(IDDF2021-ABS-0091 Figure 1. The RF classifier for clinical efficacy prediction of FMT based on clinical characteristics,

IDDF2021-ABS-0091 Figure 2. The RF classifier for clinical efficacy prediction of FMT based on serum metabolites,

IDDF2021-ABS-0091 Figure 3. The RF classifier for clinical efficacy prediction of FMT based on the combination of clinical characteristics and serum metabolome,

IDDF2021-ABS-0091 Figure 4. Comparison of the most discriminatory metabolites at baseline between the remission and non-remission groups)

Conclusions In this study, the constructed RF models using serum metabolites, clinical characteristics have a good

Abstract IDDF2021-ABS-0091 Figure 1

Abstract IDDF2021-ABS-0091 Figure 2

Abstract IDDF2021-ABS-0091 Figure 3

Abstract IDDF2021-ABS-0091 Figure 4

predictive performance of FMT efficacy in CD. The combination of them will better serve the clinical decision-making. ClinicalTrials.gov: NCT1793831.

IDDF2021-ABS-0093 ANALYSIS OF THALIDOMIDE ASSOCIATED PERIPHERAL NEUROPATHY IN PATIENTS WITH CROHN'S DISEASE

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Background Crohn's disease (CD) is an incurable chronic non-specific inflammatory bowel disease associated with environmental, genetic, infectious and immune factors. A previous study has shown that thalidomide alleviates symptoms and signs of children and adolescents with CD. But it is limited by thalidomide-induced peripheral neuropathy.

Methods Recruited were patients paying consecutive visits for refractory and active CD at the Sixth Affiliated Hospital, Sun Yat-sen University, between August 2016 and November 2021. We evaluated the peripheral nerve symptoms and EMG.

Results 69 patients were recruited in this study; among them, 31 patients had peripheral neuropathy symptoms and 24 were EMG positive. But of the 38 asymptomatic patients, 20 remained EMG positive. Of these 44 patients with peripheral neuropathy, 30 had mild impairment, 13 had moderate impairment, and one had severe impairment. 42 patients had sensory neuropathy, 1 patient had motor neuropathy, and 1 patient had both

Peripheral neuropathy-free patients were found in 17 of 52 patients who received thalidomide for 1 year. After discontinuation of thalidomide, 25.53% had complete response, 53.19% had partial response and 21.28% had no response. About 3.91 months later, peripheral neurological symptoms began to show relief.

Conclusions Peripheral neuropathy is common in patients with inflammatory bowel disease, but is generally mild and tolerable, with predominantly sensory nerve damage. Peripheral neuropathy should be monitored by electromyography during thalidomide administration.

IDDF2021-ABS-0100 PRIORITIZATION ON WHOLE-SLIDE IMAGES OF CLINICAL GASTRIC CARCINOMA BIOPSIES THROUGH A WEAKLY SUPERVISED AND ANNOTATION-FREE SYSTEM

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Background Recent advances in digital pathology and artificial intelligence provided the potential for the development of robust clinical diagnostic tools to support pathologists. With a worldwide shortage of pathologists and increased cancer screening programs, digital pathology is expected to grow and will revolutionize the workflow of pathologists. However, the development is hindered by the time-consuming whole slide imaging (WSI) annotation process during model training and lack of experience in integration into clinical workflow. This study aims to target these issues by developing a weakly supervised and annotation-free system to triage suspicious gastric carcinoma biopsies.

Methods We digitized 965 (2795 images) gastric biopsy cases from Prince of Wales Hospital, including 648 (2062 images), 192 (576 images) and 125 (157 images) cases for model development and as first and second external validation sets respectively to evaluate model performance. A neural network-based binary classifier for cancer detection was trained using 41 averaged cellular features generated from WSI and case diagnostic labels. Accuracy and AUC were measured for model performance. To evaluate our model to carcinoma case prioritization, another 90 cases (122 images) were digitized. 16 pathologists from 4 centers were recruited for a randomized study to review these cases in a simulated clinical workflow, with and without the assistance of our system. The final diagnosis was compared to ground truth and time spend per case was measured to demonstrate the clinical utility of triage.

Results We developed a weakly supervised system (GastroFLOW), achieving the accuracy of 78-83% and AUC of 0.92-0.95 on external validation sets, which can skip 69-78% of the non-carcinoma cases while retaining 100% sensitivity. In a simulated pathology clinical setting, GastroFLOW prioritized all CA cases forward. Moreover, 52.29-54.79% time was saved from viewing all non-carcinoma cases as compared with random scenarios (IDDF2021-ABS-0100 Figure 1).

Conclusions In summary, we developed a clinical decision support tool from annotation-free WSI, based on automatically generated cellular features for gastric carcinoma. GastroFLOW

Abstract IDDF2021-ABS-0100 Figure 1