



New insights for a better management of irritable bowel syndrome

June 15-17, 2026

Palazzo Re Enzo, Bologna, Italy

ABSTRACT BOOK

ENDORSEMENTS



POLICLINICO DI **SANT'ORSOLA**





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Italy

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Chair, Italy

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Hans Törnblom
Sweden



Tim Vanuytsel
Belgium



Nathalie Vergnolle
France

SCIENTIFIC PROGRAM

POSTGRADUATE COURSE: A JOURNEY TOWARDS EFFECTIVE MANAGEMENT OF IBS



Palazzo Re Enzo

MONDAY, JUNE 15, 2026

10:00 Registration

11:00 Diagnosis

Chairs: *Enrico Corazziari (Italy), Hans Törnblom (Sweden)*

11:00 Challenges in IBS management: Clinical case 1
David Meacci (Italy)

11:35 Clinical pearls in history and symptom assessment
Maura Corsetti (UK)

12:00 Overlapping conditions and the role of gender
Lin Chang (USA)

12:25 Diagnostic tests: when and which
Imran Aziz (UK)

12:50 Lunch Break

13:40 Treatment

Chairs: *Anthony Lembo (USA), Vincenzo Stanghellini (Italy)*

13:40 Challenges in IBS management: Clinical case 2
Hanne Matheussen (Belgium)

14:15 Dietary management
Stine Störsrud (Sweden)

14:40 Traditional therapies vs. nutraceuticals
Cesare Cremon (Italy)

15:05 Evidence-based approach for microbiota modulation
Carmelo Scarpignato (Malta)

15:30 Neuromodulators in the hands of the gastroenterologist
Hans Törnblom (Sweden)

15:55 Closing remarks
Maura Corsetti (UK)

OPENING CEREMONY



Palazzo Re Enzo

MONDAY, JUNE 15, 2026

18:00 Welcome

Giovanni Barbara

Congress Chair, University of Bologna

Vincenzo Stanghellini

Scientific Committee Chair, University of Bologna

Lorenzo Montanaro

Research Delegate of the Department of Medical and Surgical Sciences, University of Bologna

Marco Seri

Scientific Director IRCCS Policlinico St. Orsola

Maria Cristina Morelli

Director, Medical and Surgical Department of Digestive Hepatic and Endocrine Metabolic Diseases, IRCCS Policlinico St. Orsola, Bologna

18:30 Inaugural Lecture

Food Waste and the Right to Food: Two Sides of the Same Plate

Andrea Segrè (Italy)

Professor of Circular Economy and Sustainable Development Policies, University of Bologna and Founder Zero Waste Campaign

19:00 Welcome Reception

PLENARY SESSION

Palazzo Re Enzo



TUESDAY, JUNE 16, 2026

07:15 Registration

08:00 Program overview
Giovanni Barbara (Italy)

Session I – Rome Foundation Symposium - What's New in Rome V

Chairs: *Vincenzo Stanghellini (Italy), Jan Tack (Belgium)*

08:20 Rome Foundation related activities
Jan Tack (Belgium)

08:30 Recent pathophysiology insights relevant for IBS symptom generation
Madhusudan Grover (USA)

08:55 IBS in Rome V criteria: what's new
Anthony Lembo (USA)

09:20 Centrally mediated disorders of gastrointestinal pain
Qasim Aziz (UK)

09:45 Coffee Break

Session II – Is it all IBS or maybe a different diagnosis

Chairs: *Lin Chang (USA), Maura Corsetti (UK)*

10:15 Bile acid metabolism and symptom generation
Michael Camilleri (USA)

10:40 Central or peripheral mechanisms underlying abdominal pain
Sigrid Elsenbruch (Germany)

11:05 The small intestine as a key player in symptom perception
Tim Vanuytsel (Belgium)

Session III – Advances in IBS pathophysiology from large cohorts

Chairs: *Michael Camilleri (USA), Roberto De Giorgio (Italy)*

11:30 Genetics of IBS across definitions, subtypes, ethnicities, sexes and endophenotypes

Mauro D'Amato (Italy)

11:55 Food intolerance revisited: the GenMalCarb study

Maura Corsetti (UK)

12:20 Clinical highlights from the H2020 DISCOvERIE study

(Development, diagnosis and prevention of gender-related Somatic and mental Comorbidities in Irritable Bowel Syndrome In Europe)

Magnus Simrén (Sweden)

12:45 Translational highlights from the H2020 DISCOvERIE study

(Development, diagnosis and prevention of gender-related Somatic and mental Comorbidities in Irritable Bowel Syndrome In Europe)

Javier Santos (Spain)

13:10 Lunch Break and Poster Session

Poster Session

Chairs

Dan Dumitrascu (Romania)

Vasile Drug (Romania)

Madhusudan Grover (USA)

Paola Iovino (Italy)

Committee Members

Lukas Balsiger (Switzerland)

Maria Raffaella Barbaro (Italy)

Chiara Castellana (Italy)

Luigi Colecchia (Italy)

Loris Lopetuso (Italy)

Daniele Mandolesi (Italy)

Hanne Matheussen (Belgium)

Daniele Salvi (Italy)

Nathalie Vergnolle (France)

PARALLEL I SESSION IV

Palazzo Re Enzo 



TUESDAY, JUNE 16, 2026

Chairs: Massimo Bellini (Italy), Jan Tack (Belgium)

14:10 **Sponsored lecture BROMATECH**

Gut microbiota and probiotics for the integrity of the intestinal epithelial barrier

Giovanni Barbara (Italy)

14:35 **Sponsored lecture BROMATECH**

Gut-vascular barrier modulation by strain-specific probiotics

Maria Rescigno (Italy)

15:00 **Sponsored lecture BIOGAIA**

L. reuteri DSM 17938 and ATCC PTA 6475 in IBS: a translational approach

Magnus Simrén (Sweden)

Pathophysiological modulation of intestinal microenvironment

15:20 **Fiber modulation of gut microbiota and biofilms**

Mahesh Desai (Luxembourg)

15:45 **The gluten spectrum and IBS**

Roberto De Giorgio (Italy)

16:10 **Probiotics: from history to future**

Simone Guglielmetti (Italy)

16:35 **Coffee Break**

Free Papers Session

Chairs: *Dan Dumitrascu (Romania), Francisco Guarner (Spain)*

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|-------|---|
| 16:55 | Post-inflammatory dysbiosis fuels visceral abdominal pain through an altered host-microbiota interaction: mechanistic insights into the effects of faecal microbiota transplantation
<i>Elena Lucarini (Italy)</i> |
| 17:07 | Effects of γ-aminobutyric acid (GABA) supplementation on symptoms, quality of life, intestinal permeability, systemic inflammation and gut microbiota in patients with IBS-D: a randomized, double blind, placebo-controlled, crossover pilot study
<i>Lorenzo Cancelli (Italy)</i> |
| 17:19 | Distinct faecal microbiota signatures in IBS-D patients with bile acid diarrhoea are associated with SeHCAT-defined disease severity
<i>Beatriz Lobo (Spain)</i> |
| 17:31 | Clinical Differences Between Irritable Bowel Syndrome and Irritable Bowel Syndrome with Bile Acid Malabsorption in Patients Undergoing SeHCAT Testing
<i>Luigi Colecchia (Italy)</i> |
| 17:43 | Adjour |
| 20:00 | Social Dinner |

PARALLEL II SESSION IV

Sala Borsa 



TUESDAY, JUNE 16, 2026

Chairs: Florencia Carbone (Belgium), Cesare Cremon (Italy), Vasile Drug (Romania)

14:20 **Sponsored lecture OPELLA**

Peppermint Oil and irritable bowel syndrome

William Fusco (Italy)

14:45 **Sponsored lecture SCHWABE**

The potential of multi-target plant-based therapies for visceral pain and dysbiosis in patients with DGBI

Giovanni Marasco (Italy)

15:05 **Sponsored lecture GIULIANI**

Dysbiosis and IBS: Pathophysiological Implications and Evidence-Based Probiotic Strategies

Tandem Session: *Simone Guglielmetti (Italy), Loris Lopetuso (Italy)*

Global Studies

15:30 **Rome V epidemiological studies**

Imran Aziz (UK)

15:55 **Post-infection DGBI: results from the Rome Foundation Global Epidemiology Study**

Giovanni Marasco (Italy)

16:20 **Bloating and distension: Asia vs. Europe (AEGIS Study)**

Lukas Balsiger (Switzerland)

16:45 **Coffee Break**

Free Papers Session

Chairs: *Imran Aziz (UK), Lukas Balsiger (Switzerland)*

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| 17:05 | Effectiveness of Digital Nutrition Education Based on NICE Guidelines Versus Nordic Nutrition Recommendations for IBS Over A 12-Month Period: A Randomized Controlled Trial
<i>Kristina Cullman (Sweden)</i> |
| 17:17 | Nutritional adequacy and dietary patterns in patients with irritable bowel syndrome with symptoms of avoidant/restrictive food intake disorder
<i>Amanda Blomsten (Sweden)</i> |
| 17:29 | Distinct frequencies of small bowel homing B-lymphocytes in patients with IBS
<i>Lukas Balsiger (Switzerland)</i> |
| 17:41 | Fasting quantitative motor differences and increased postprandial motility index in patients with IBS despite normal small bowel manometry
<i>Christian von Muhlenbrock (Chile)</i> |
| 17:53 | Adjour |
| 20:00 | Social Dinner |

PARALLEL III SESSION IV

Oratorio San Giovanni Battista dei Fiorentini 



TUESDAY, JUNE 16, 2026

Chairs: Giovanni Barbara (Italy), Javier Santos (Spain), Edoardo Savarino (Italy)

14:20 **Sponsored lecture RECKITT BENCKISER HEALTHCARE**

Rethinking DGBI Through the Lens of Gut Permeability

Javier Santos (Spain), Edoardo Savarino (Italy)

14:45 **Sponsored lecture CADIGROUP**

Escherichia Coli Nissle 1917: A Century-Old Probiotic Driving Modern Innovations in Gut Inflammation Control

Giovanni Sarnelli (Italy)

Pathophysiology, bridging science to patient care

15:10 Mucus and proteases in IBS

Nathalie Vergnolle (France)

15:35 Intestinal, vascular and blood brain barriers in health and disease

Maria Rescigno (Italy)

16:00 Eosinophil activation and IBS

Karen Routhiaux (Belgium)

16:25 Coffee Break

Free Papers Session

Chairs: *Madhusudan Grover (USA), Giovanni Sarnelli (Italy)*

16:45 Colonic Mast Cell activation is linked to mental and somatic symptom severity in Irritable Bowel Syndrome: results from the DISCOvERIE project

Ana Maria Gonzalez Castro (Spain)

16:57 Transcriptomic and Proteomic profiling of colonic mucosa in patients with irritable bowel syndrome with or without mental/somatic comorbidities results from the European Multicenter DISCOvERIE study

Carmen Alonso Cotoner (Spain)

17:09 Beyond a uniform symptom: anatomical distribution of bloating and associated clinical features, an analysis from the AEGIS study

Jara Lehoucq (Belgium)

17:21 GWAS of stool consistency and in vivo functional validation identify causal genes underlying gut motility

Cristian Diaz-Munoz (Spain)

17:33 Adjourn

20:00 Social Dinner

PLENARY SESSION

Palazzo Re Enzo



WEDNESDAY, JUNE 17, 2026

Session V - Highlights from Tuesday's Free Papers Sessions and Intestinal Microenvironment

Chairs: *Cesare Cremon (Italy), Tim Vanuytsel (Belgium)*

08:30 Highlights from Tuesday's Free Paper Sessions

*Francisco Guarner (Spain), Imran Aziz (UK),
Madhusudan Grover (USA)*

08:55 Mast cell activation in IBS

Guy Boeckxstaens (Belgium)

09:20 Advances in understanding how bacterial products influence brain and behavior

Stephen Collins (Canada)

Session VI - What's New on Gut Microbiota

Chairs: *Patrizia Brigidi (Italy), Stephen Collins (Canada)*

09:45 Gut microbiota: tales from the past and a look to the future

Francisco Guarner (Spain)

10:10 Auto-brewery syndrome

William Fusco (Italy)

10:35 Predictors of response to gut microbiota modulation

Gianluca Ianiro (Italy)

11:00 Coffee Break

PROGRAM PLENARY SESSION



Palazzo Re Enzo

WEDNESDAY, JUNE 17, 2026

Session VII – Management

Chairs: *Edoardo Savarino (Italy), Magnus Simrén (Sweden)*

11:25 Advancing Low-FODMAP diets to the next level
Sanna Nybacka (Sweden)

11:50 Is the mediterranean diet the answer after all?
Imran Aziz (UK)

12:15 Avoidant/Restrictive Food Intake Disorder (ARFID)
Chloè Melchior (France)

Session VIII – Hot Topics on Management

Chairs: *Carmelo Scarpignato (Malta), Vincenzo Stanghellini (Italy)*

12:40 Brain-gut behavior therapies
Lin Chang (USA)

13:05 Therapeutic approaches for gut barrier dysfunction
Giovanni Barbara (Italy)

13:30 Role of gastrointestinal motility in IBS symptom generation and therapeutic target
Jan Tack (Belgium)

13:55 Concluding remarks and awards for Best Abstracts
Giovanni Barbara (Italy)

14:00 Lunch break

POSTER SESSION

POSTER AREA - JUNE 16, 2026 - TIME: 13:10-14:20

	Title	Topic	Presenter	Other Authors
01	A novel probiotic mixture attenuates cognitive impairment and bowel symptoms in experimental Alzheimer's Disease	BASIC SCIENCE	<i>Pierucci Clarissa</i>	Pierucci Clarissa, Mariella Errede, Maria Raffaella Barbaro, Francesca Bianco, Federica Monti, Sara Angelini, Giovanni Barbara, Nunzia Bernardini, Carmelo Scarpignato, Carolina Pellegrini and Probiotal Research Group
02	Epithelial alterations and subtype-specific signatures in irritable bowel syndrome: insights from patient-derived intestinal organoids	BASIC SCIENCE	<i>Faggin Sofia</i>	Faggin Sofia Fassina Elena, Bianco Francesca, Sagnat David, Canivet Astrid, Marasco Giovanni, Cremon Cesare, Barbaro Maria Raffaella, Barbara Giovanni, Vergnolle Nathalie
03	Evaluating in-vivo intraluminal colonic electrical activity in the context of ex-vivo ENS morphology in mice	BASIC SCIENCE	<i>Planchette Arielle</i>	Planchette Arielle, Humailo Karissa, Cabara Yoseline, Wojcicki Karol, De Montalivet Etienne, Sobolewski Aleksander, Spencer Nick, Neunlist Michel, Gora Michalina
04	Intestinal barrier dysfunction: preclinical evaluation of the mechanism of action of a xyloglucan-pea protein combination	BASIC SCIENCE	<i>Bramati Giulia</i>	Bramati Giulia, Casella Sabrina, Esposito Emanuela, Scuderi Sarah Adriana, Palermo Nicoletta, Cuzzocrea Salvatore, Campolo Michela
05	Longitudinal in-vivo assessment of colonic inflammation and function using multimodal Optical Coherence Tomography and Electrophysiology	BASIC SCIENCE	<i>Humailo Karissa</i>	Humailo Karissa, Planchette Arielle, Wojcicki Karol, De Montalivet Etienne, Sobolewski Aleksander, Gantar Ivana, Cabara Yoseline, Scholer Jules, Neunlist Michel, Gora Michalina
06	Mast Cells are Close to Blood Vessels Characterized by Increased Permeability in the Colonic Mucosa of Patients with Irritable Bowel Syndrome	BASIC SCIENCE	<i>Monti Federica</i>	Monti Federica, Cremon Cesare, Meacci David, Matteucci Maria Chiara, Marasco Giovanni, Bianco Francesca, Viscito Myriam, Barbara Giovanni, Barbaro Maria Raffaella
07	Novel patients with biallelic variants in LIG3 expand the clinical phenotype associated to mitochondrial DNA depletion syndrome 20, MNGIE type	BASIC SCIENCE	<i>Bonora Elena</i>	Bonora Elena, Diquigiovanni Chiara, Orsini Arianna, Governatori Giulia, Zacchi Eliana, Montanari Francesca, Demczko Matthew, Rad Aboulfazl, De Giorgio Roberto, Bonora Elena
08	Permeability dysfunction in Irritable Bowel Syndrome (IBS) patients with and without comorbidities: results from an In vitro study of the European multicentre DISCOVERIE project	BASIC SCIENCE	<i>Bianco Francesca</i>	Bianco Francesca, Barbaro Maria Raffaella, Viscito Myriam, Cremon Cesare, Marasco Giovanni, Farre Ricard, Santos Javier, Gonzalez Ana, Alonso Cotoner Carmen, Simrén Magnus, Barbara Giovanni
09	AI-Assisted Functional Ultrasound of Intestinal Motility for IBS Phenotyping: A Pilot Feasibility Study	CLINICAL SCIENCE	<i>Shtompel Liubov</i>	Bubnov Rostyslav, Kotsyuba Roman, Shtompel Liubov, Kotsyuba Andrii, Spivak Mykola
10	AI-driven social listening research on the quality of nutrition information for improving gut health and patient-reported outcomes: A pilot study	CLINICAL SCIENCE	<i>Prados-Bo Andreu</i>	Prados-Bo Andreu, Bosch-Pujadas Mireia, Gonzalez Lucia, Rabassa Montserrat
11*	Beyond referrals: Reclaiming conceptual biopsychosocial integration in neurogastroenterology	CLINICAL SCIENCE	<i>Trindade Ines</i>	Trindade Ines

12	Can Anorectal Manometry Be Simplified Without Compromising RP Accuracy?	CLINICAL SCIENCE	<i>Falcone Benedetta</i>	Lambiase Cristian, Falcone Benedetta, Chiarioni Giuseppe, Salemme Rebecca, Roncoli Lorenzo, Cancelli Lorenzo, Rettura Francesco, Iovino Paola, De Bortoli Nicola, Bellini Massimo
13	Characterizing Somatic Hyperalgesia in patients with Irritable Bowel Syndrome	CLINICAL SCIENCE	<i>von Muhlenbrock Christian</i>	von Muhlenbrock Christian, Madrid Ana Maria, Landskron Glauben, Vanuytsel Tim
14	Dietary changes and longer-term symptom improvement in IBS: a secondary analysis of the CARIBS randomized controlled trial	CLINICAL SCIENCE	<i>Sultan Nessmah</i>	Sultan Nessmah, Törnblom Hans, Josefsson Axel, Bohn Lena, Frändemark Asa, Weznaver Cecilia, Störsrud Stine, Simrén Magnus, Nybacka Sanna
15	Differentiating therapeutic responses in Rome IV functional constipation and irritable bowel syndrome with predominant constipation diagnosed in a secondary care center in the UK	CLINICAL SCIENCE	<i>Copia Alice</i>	Mocci Chiara, Sbarigia Caterina, Copia Alice, Kuttalek David, Cicognani Beatrice, Lambiase Christian, Butt Mohsin, Darie Anamaria, Mohanan Aleesha, Bush Debbie, Isherwood Grace, Lewis-lawson Tilly, Card Tim, Corsetti Maura
16	Effectiveness of Yoga for Irritable Bowel Syndrome: A Systematic Review	CLINICAL SCIENCE	<i>Costantino Andrea</i>	Pavan Francesco, Singh Yadav Sunil, Costantino Andrea, Dell'Era Alessandra, Buoli Massimiliano
18	Factors associated with food-related quality of life in irritable bowel syndrome	CLINICAL SCIENCE	<i>Blomsten Amanda</i>	Blomsten Amanda, Sultan Nessmah, Nybacka Sanna, Katsumata Ryo, Törnblom Hans, Störsrud Stine, Simrén Magnus
19	Food triggers and food avoidance in functional bowel disorders: the role of avoidant/restrictive food intake disorder (ARFID) symptom dimensions	CLINICAL SCIENCE	<i>Blomsten Amanda</i>	Blomsten Amanda, Nybacka Sanna, Trindade Ines, Törnblom Hans, Störsrud Stine, Simrén Magnus
20	High IgA anti-transglutaminase titers are linked to systemic inflammation and unfavorable lipid pattern in Celiac Disease	CLINICAL SCIENCE	<i>Bini Lorenzo</i>	Bini Lorenzo, Damone Francesco, Gargani Alessia, Pinna Andrea, Lambiase Christian, Mumolo Maria Gloria, de Bortoli Nicola, Bellini Massimo
21*	How Anxiety and Depression Alter Esophageal Motility and Reflux Parameters – A Retrospective Study Using Esophageal High Resolution Impedance Manometry and 24-Hour pH Monitoring	CLINICAL SCIENCE	<i>Ayad Mina</i>	Ayad Mina, Muhamed Siti, Abd Aziz Azliani, Dal nial Noriha, Lee Yeong Yeh
22	Is IBS a Food Allergy? Confocal Laser Endomicroscopy Findings in Patients with IBS: A Narrative Review	CLINICAL SCIENCE	<i>Costantino Andrea</i>	Pavan Francesco, Costantino Andrea, Siragusa Nicola, Tontini Gian Eugenio, Elli Luca, Lasagni Giovanni, Dubini Marco, Scricciolo Alice, Vecchi Maurizio

23	Methodology of the GIANT Study: A Multicentre, Randomized, Double Blind, Parallel Group, Placebo Controlled Trial Assessing Gelsectan® in Patients with Diarrhoea Predominant Irritable Bowel Syndrome	CLINICAL SCIENCE	Cresci Andrea	Cresci Andrea, Sabaté Jean Marc, Santos Javier, Costantino Andrea, Barbara Giovanni, Annibale Bruno, Savarino Edoardo Vincenzo, Di Stefano Michele, Bellini Massimo, Melchior Chloé, Sanchez Vegazo Carlos Teruel, Tack Jan, Sarnelli Giovanni
24	Overlap of irritable bowel syndrome symptoms and Yersinia enterocolitica infection	CLINICAL SCIENCE	Troskot Peric Rosana	Troskot Peric Rosana, Stanic Gabrijela, Jandric Dubravka, Knobloch Mia, Kodric Franjo
25	Overuse systemic antibiotic therapy in chronic obstructive pulmonary disease and irritable bowel syndrome-like symptoms: evidence supporting the gut-lung axis	CLINICAL SCIENCE	Gologan Elena	Gologan Elena, Gologan Andrei Nicolae, Mihai Catalina, Timofte Oana, Gologan Dimitrie Stefan, Gilca Blanariu Georgiana Emmanuela, Drug Vasile
26	Phototherapy-Based Multimodal Rehabilitation Modulates Central Sensitization and Gut-Brain Axis Dysfunction in War-Related IBS: AI-Assisted Ultrasound Pilot Study	CLINICAL SCIENCE	Shtompel Liubov	Bubnov Rostyslav, Kalika Lev, Kotsyuba Roman, Shtompel Liubov, Benes Pavel, Spivak Mykola
27	Prevalence and predictive factors of bile acid malabsorption in outpatients referred for a SeHCAT test	CLINICAL SCIENCE	Sbarigia Caterina	Sbarigia Caterina, Lambiase Christian, Davies Robyn, Singh Annika, Butt Mohsin, Darie Ana-maria, Bush Debbie, Mohanan Aleesha, Hay Peter, Corsetti Maura
28	Rectal sensory dysfunction is more prevalent in slow transit constipation compared to both normal transit and outlet dysfunction constipation	CLINICAL SCIENCE	Lambiase Christian	Lambiase Christian, Bellini Massimo, De Giorgio Roberto, Salemmo Rebecca, Cancelli Lorenzo, Rettura Francesco, Morganti Riccardo, Popa Stefan Lucian, Chiarioni Giuseppe
29	Shaping the Gut-Brain Axis in Chronic Intestinal Disease: How Anxiety-Depressive Symptoms and Dietary Habits Influence Gut Microbiota Diversity and Composition	CLINICAL SCIENCE	Mancuso Tommaso	Altomare Annamaria, Restaneo Laura, Mancuso Tommaso, Marchetti Lorenzo, De Carlo Giovanni, Filardo Simone, Di Pietro Marisa, Emerenziani Sara, Cicala Michele, Guarino Michele Pier Luca
30*	SIBO-Driven Symptom Burden and Differential Response to Rifaximin Across IBS Subtypes: A Prospective Study	CLINICAL SCIENCE	Khachidze Tatia	Khachidze Tatia
31	Symptom fluctuations over time in Irritable Bowel Syndrome with and without psychiatric and somatic comorbid conditions. Results from the DISCOvERIE project.	CLINICAL SCIENCE	Midenfjord Irina	Midenfjord Irina, Khadija Mahrukh, Sundelin Elias, Trindade Ines A, Törnblom Hans, Santos Javier, DISCOvERIE Group the, Rodriguez-Urrutia Amanda, Simrén Magnus
32	The Effect of Gluten/Wheat-Free Diet in Patients with Irritable Bowel Syndrome on Symptom Severity and Well-being	CLINICAL SCIENCE	Lungaro Lisa	Lungaro Lisa, D'Ambrosio Martina, Carbone Francesca Pia, Costanzini Anna, Marchetti Federica, Mansueto Pasquale, Carroccio Antonio, Volta Umberto, De Giorgio Roberto, Caio Giacomo
33	When Food Avoidance Meets Diagnostic Criteria: Avoidant/Restrictive Food Intake Disorder in Irritable Bowel Syndrome	CLINICAL SCIENCE	Mikhael-Moussa Hiba	Mikhael-Moussa Hiba, Aupetit Alexandra, Guérin Olivia, Desprez Charlotte, Monti Francesco, Grosjean Julien, Gourcerol Guillaume, Leroi Anne-Marie, Achamrah Najate, Melchior Chloé

34	Burden, Features and Factor Associated with Disorders of Gut-Brain Interaction In Italy: Results From the Rome Foundation Global Epidemiology Study	EPIDEMIOLOGY	Colecchia Luigi	Marasco Giovanni, Hod Keren, Colecchia Luigi, Cremon Cesare, Corazziari Enrico Stefano, Sperber Ami, Palsson Olafur, Bangdiwala Shrikant, Barbara Giovanni
35	Comparative Study on Burden, Features and Determinants of Disorders of Gut-Brain Interaction between Southern Europe and the Rest of Continent: Results From the Rome Foundation Global Epidemiology Study	EPIDEMIOLOGY	Colecchia Luigi	Marasco Giovanni, Hod Keren, Colecchia Luigi, Sperber Ami, Palsson Olafur, Bangdiwala Shrikant, Barbara Giovanni
36	Distinct Pain Profiles Across Irritable Bowel Syndrome Subtypes: Results from the Rome Foundation Global Epidemiology Study	EPIDEMIOLOGY	Hod Keren	Hod Keren, Marasco Giovanni, Colecchia Luigi, Sperber Ami D, Palsson Olafur S, Bangdiwala Shrikant I, Barbara Giovanni
37	Do DGBIs Follow the Hygiene Hypothesis?: Analyses from the Rome Foundation Global Epidemiology Study.	EPIDEMIOLOGY	Hod Keren	Hod Keren, Marasco Giovanni, Colecchia Luigi, D Sperber Ami, Palsson S Olafur, Bangdiwala I Shrikant, Barbara Giovanni
38	Epidemiology of irritable bowel syndrome in chile: differences across healthcare systems and urban-rural populations	EPIDEMIOLOGY	von Muhlenbrock Christian	von Muhlenbrock Christian, Madrid Ana Maria, Carbone Florencia, Tack Jan, Vanuytsel Tim
39	Evacuation-Related Relief of Dyspeptic Symptoms Influences Diagnostic Classification Toward Irritable Bowel Syndrome Over Functional Dyspepsia	EPIDEMIOLOGY	Alcala Gonzalez Luis Gerardo	Alcala Gonzalez Luis Gerardo, Carbone Florencia, Van de Bruaene Cedric, Von Muhlenbrock Christian, Tack Jan, Vanuytsel Tim, AEGIS working Group AEGIS
40	Global IBS, regional phenotypes: variability in pain, bloating, and daily life impact across asian and western european patients from the aegis survey	EPIDEMIOLOGY	von Muhlenbrock Christian	von Muhlenbrock Christian, Carbone Florencia, Van de Bruaene Cedric, Vanuytsel Tim, Tack JaN
41	Global prevalence of functional abdominal bloating according to Rome Criteria: systematic review and meta-analysis	EPIDEMIOLOGY	Mantellino Alessandra	Mantellino Alessandra, Barberio Brigida, Vicidomini Vittorio, Carletti Matteo, Iovino Paola, Santonicola Antonella
42	Impact of sub-diagnostic bowel symptoms in the general population	EPIDEMIOLOGY	van Gils Tom	van Gils Tom, Blomsten Amanda, Törnblom Hans, Simrén Magnus
43	Incomplete Bowel Emptying is Common and Associated with Impaired Quality of Life in Individuals with Bowel Symptoms in the General Population	EPIDEMIOLOGY	Aliyu Abdulsalam	Aliyu Abdulsalam, Igera Joost, Blomsten Amanda, van Gils Tom, Nybacka Sanna, Katsumata Ryo, Törnblom Hans, Simrén Magnus
44	Prevalence and burden of disorders of gut-brain interaction in Nigeria: results from the Rome foundation global epidemiology study	EPIDEMIOLOGY	Aliyu Abdulsalam	Aliyu Abdulsalam, van Gils Tom, Hreinsson Johann, Nigeria RFGES Research Group, Bangdiwala Shrikant, Törnblom Hans, Palsson Olafur, Sperber Ami, Okeke Edith, Simrén Magnus
45*	Prevalence of Disorders of Gut-Brain-Interaction in pediatric patients with in-remission Inflammatory Bowel Disease: an Italian multicenter study	EPIDEMIOLOGY	Quatralo Giovanna	Quatralo Giovanna, Chirico Niccolo', Colecchia Luigi, Stella Giuseppe, Proli Francesco, Pisano Pietro, Romeo Erminia, De Angelis Paola, Pensabene Licia, Marasco Giovanni, Di Nardo Giovanni, Barbara Giovanni, Gasbarrini Antonio, Scaldaferri Franco, Giorgio Valentina

46	Symptom Burden and Quality of Life in Individuals with Diabetes and Disorders of Gut-Brain Interaction (DGBI): A Cross-Sectional Study Using Data from the Rome IV Global Epidemiology Study	EPIDEMIOLOGY	<i>Hod Keren</i>	Hod Keren, Marasco Giovanni, Coleccia Luigi, D Sperber Ami, Palsson Olafur S, Bangdiwala Shrikant I, Barbara Giovanni
47	A FODMAP-Gentle Diet: Effective Symptom Relief Without Increased Nutritional Risk in Tertiary Care Irritable Bowel Syndrome	MANAGEMENT	<i>Routhiaux Karen</i>	Routhiaux Karen, Van den Houte Karen, Vanuytsel Tim, Tack Jan
48	Effect of Virtual Reality-Supported Psychotherapy for the Treatment of Irritable Bowel Syndrome	MANAGEMENT	<i>Aguilar Ariadna</i>	Aguilar Ariadna, Beneria Anna, Barber Claudia, Alcala Luis Gerardo, Santos Javier, Malagelada Carolina, Lobo Beatriz, Ramos Jose Antonio, Serra Jordi
49*	Efficacy and Safety of Postbiotics in Irritable Bowel Syndrome: A Systematic Review and Meta-analysis	MANAGEMENT	<i>Ayad Mina</i>	Ayad Mina, Yu Shiyi, El Shennawy Safia, Ali Enaam, Sahran Nur-Fazimah, El walid Jad Rawan, Lee Yeong Yeh
50	Evaluation of the Usability of "The Ten Dietary Commandments" for Patients with Irritable Bowel Syndrome: An Expert Opinion on Dietary Strategies with Clear and Practical Recommendations for IBS Management	MANAGEMENT	<i>Costantino Andrea</i>	Costantino Andrea, Siragusa Nicola, Baldassari Gloria, Passera Laura, De Tommaso Carlo, Romano Ruggero, Ferrario Lorenzo, Dell'Era Alessandra, Caprioli Flavio, Vecchi Maurizio
51	Management strategies among patients with lower gastrointestinal symptoms - A multinational survey with a focus on irritable bowel syndrome	MANAGEMENT	<i>Tai Kin Ki</i>	Tai Kin Ki, Edokpayi Kay
52	Supragastric Belching-Induced Reflux: From Diagnosis to Resolution Through Cognitive-Behavioral Therapy – A Case Report	MANAGEMENT	<i>Dell'Era Alessandra</i>	Siragusa Nicola, Costantino Andrea, Maconi Giovanni, Dell'Era Alessandra
53	Topical Capsaicin as a Novel and Effective Treatment for Cannabinoid Hyperemesis Syndrome through TRPV1 Modulation: Case Report and Systematic Review of the Literature	MANAGEMENT	<i>Dell'Era Alessandra</i>	Siragusa Nicola, Costantino Andrea, Londoni Claudio, Dell'Era Alessandra, Spina Luisa, Maconi Giovanni, Vecchi Maurizio
54	UDCA supplementation modulates intestinal homeostasis in a preclinical model of IBS	PATHOPHYSIOLOGY	<i>Houzard Lucie</i>	Houzard Lucie, Colasse Gaelle, Dujardin Maeva, Coeffier Moise, Breton Jonathan
55	A Probiotic Formulation of Lactobacillus rhamnosus GG and Lactobacillus plantarum 299V Restores Epithelial Barrier Integrity following IBS-Derived Mucosal Mediators: results from an in vitro study	TRANSLATIONAL SCIENCE	<i>Viscito Myriam</i>	Viscito Myriam, Bianco Francesca, Monti Federica, Meacci David, Loffreda Ulisse, Di Gregorio Camilla, Cremon Cesare, Marasco Giovanni, Barbara Giovanni, Barbaro Maria Raffaella
56	Benchmarking disaccharidase activity: comparative analyses of duodenal biopsy assays, computational predictions, clinical classifications, and genetic testing	TRANSLATIONAL SCIENCE	<i>Francisco Heredia Fernández</i>	Rubio Sanchez Pajares Ibone, Eswaran Shanti, Löscher Britt-Sabina, Wesse Tanja, Franke Andre, Chey William D, D'Amato Mauro

57	Cross-definition GWAS of irritable bowel syndrome in 2.8 million individuals reveals cardiometabolic and triglyceride-linked mechanisms	TRANSLATIONAL SCIENCE	<i>Di Lorenzo Biagio</i>	Di Lorenzo Biagio, Diaz-Munoz Cristian, Heredia-Fernandez Francisco, bellygenes initiative the, D'Amato Mauro
58*	Development and Validation of GI Symptoms Animated Pictograms (GAPs) as a Diagnostic Tool for GI dysfunction Among Patients with Cognitive Impairment	TRANSLATIONAL SCIENCE	<i>Ayad Mina</i>	Ayad Mina, Lee Yeong Yeh, Holtmann Gerald, Kuo Braden, Schmulson Max, Hang Dao Viet, Ghoshal Uday, Marie Lawenko Rona, Miftahussurur Muhammad, Ali Enaam, Faizal Mohd, Kueh Erica, Oshima Tadayuk
59	Fecal Calprotectin as a Mediating Biomarker Linking Intestinal Barrier Dysfunction to Diarrhea Severity in IBS-D	TRANSLATIONAL SCIENCE	<i>Hod Keren</i>	Gur Arie Ayelet, Engel Tal, Ukashi Offir, Marasco Giovanni, Sigall-Boneh Rotem, Kaufman-Shriqui Vered, Hod Keren
60	Gut Microbiota Signatures Differentiate Patients with Constipation-Predominant and Diarrhea-Predominant Irritable Bowel Syndrome	TRANSLATIONAL SCIENCE	<i>Costantino Andrea</i>	Costantino Andrea, Strati Francesco, Cremonesi Alberto, Ciafardini Clorinda, Amoroso Chiara, Honcharyuk Ivanna, Maragno Paola, Facciotti Federica, Caprioli Flavio, Vecchi Maurizio
61	Promotion and Monitoring of Physical Activity with a Digital App in Patients with Irritable Bowel Syndrome: Clinical Outcomes and Fecal Microbiota Analysis of a Randomized Controlled Study	TRANSLATIONAL SCIENCE	<i>Costantino Andrea</i>	Costantino Andrea, Cremonesi Alberto, Strati Francesco, Pessarelli Tommaso, Ciafardini Clorinda, Amoroso Chiara, Honcharyuk Ivanna, Maragno Paola, Facciotti Federica, Caprioli Flavio, Basilisco Guido, Vecchi Maurizio
62	The genetic architecture of constipation in 2.3 million individuals	TRANSLATIONAL SCIENCE	<i>Heredia-Fernandez Francisco</i>	Heredia-Fernandez Francisco, Diaz-Munoz Cristian, Di Lorenzo Biagio, Camargo Tavares Leticia, Bonfiglio Ferdinando, Meta-analysis Initiative GB, D'Amato Mauro
63	Towards clinical translation of preclinical innovation in intraluminal electrophysiology	TRANSLATIONAL SCIENCE	<i>Planchette Arielle</i>	Planchette Arielle, Wojcicki Karol, Sobolewski Aleksander, de Montalivet Etienne, Humailo Karissa, Villanueva Vicente, Diana Michele, Montamat Shenandoah, Neunlist Michel, Gora Michalina

* Poster withdrawn

LECTURES



IMRAN AZIZ

Honorary Consultant Gastroenterologist & Senior Clinical Lecturer
Academic Unit of Gastroenterology | Sheffield Teaching Hospitals NHS
Foundation Trust | University of Sheffield - UK

BIOSKETCH

I qualified in Medicine with Honours in 2004, subsequently undertaking specialist training in general medicine and gastroenterology that culminated in a postgraduate degree from the University of Sheffield and a two-year post-doctoral fellowship in Disorders of Gut-Brain Interaction (DGBI) at the Sahlgrenska Academy, University of Gothenburg, Sweden. In late 2018, I was appointed Senior Clinical Lecturer and Honorary Consultant Gastroenterologist in Sheffield.

I have supervised 10 undergraduate BMedSci and postgraduate MD/PhD research students to thesis completion, each producing original publications in high-impact journals; several have gone on to win professional accolades, and multiple students have independently nominated me for the University of Sheffield Educational Awards. I have published over 100 peer-reviewed scientific articles and numerous book chapters. Reflecting my international standing in the field, I am a co-author of the British Society of Gastroenterology guidelines on the management of irritable bowel syndrome and functional dyspepsia.

I serve on the editorial board of *Gastroenterology*, a leading international journal in the field, and chair the Rome Partners Group, whose mission is to foster international collaboration between the Rome Foundation and early- and mid-career neurogastroenterologists.

My contributions to gastroenterology have been recognised through a number of competitive awards. In 2021, I received the United European Gastroenterology Rising Star Award, presented to outstanding early-career clinician-scientists across Europe. In 2025, I was elected a Rome Foundation Academic Fellow in recognition of sustained international achievement as a clinical academic. In 2026, the Nutrition Society awarded me the Cuthbertson Medal for excellence in clinical nutrition research, and the Rome Foundation awarded my team the Ray Clouse Award for the best scientific research paper in DGBI.

ABSTRACT

Diagnostic tests in suspected IBS: when and which?

Irritable bowel syndrome (IBS) is a prevalent functional bowel disorder defined by recurring abdominal pain linked to changes in bowel habits. It ranks among the most common reasons patients seek gastroenterological care in both primary and secondary settings.

Diagnosis relies on identifying symptoms consistent with the Rome criteria while ruling out organic gastrointestinal diseases through a cost-effective and careful approach. Several conditions can mimic IBS, including coeliac disease, inflammatory bowel disease, and colorectal cancer. In patients with diarrhoea-predominant symptoms, chronic gastrointestinal infections, microscopic colitis, and primary bile acid diarrhoea should also be considered.

The potential associations between IBS and small intestinal bacterial overgrowth or exocrine pancreatic insufficiency remain contentious. Controversy stems largely from the unreliability of available diagnostic tests, which suffer from poor sensitivity and specificity, risking inaccurate conclusions about these relationships.

Rome V Global Epidemiology Study – Adults

Disorders of gut-brain interaction (DGBI) – formerly termed functional gastrointestinal disorders – are among the most prevalent conditions encountered in both primary and secondary care, yet remain incompletely understood. They represent a spectrum of conditions defined by symptom-based criteria in the absence of structural or biochemical abnormality.

The Rome Foundation Global Epidemiology Study (RFGES) was performed in 2017, with the primary aims of conducting an extensive multinational epidemiological study of all DGBIs, obtaining reliable regional and local prevalence estimates, and generating hypotheses to advance understanding of DGBI pathophysiology. Data collection yielded a final database of over 73,000 adult respondents across 33 countries, achieving equal sex distribution and pre-planned age ranges using both internet surveys and house-to-house interviews. Findings revealed that more than 40% of the global adult population can be diagnosed with a DGBI using Rome IV criteria, underscoring the enormous public health burden of these conditions.

The current presentation focuses on the Rome V adult survey, which was launched in December 2024, collecting data from 30,000 participants across 15 countries, with newly generated Rome V diagnostic scoring formulas applied to identify 25 DGBIs. It provides preliminary data, publication plans, and opportunities that will be available to investigators to analyze the Rome V epidemiological dataset.

Is the Mediterranean Diet the answer after all?

Irritable bowel syndrome (IBS) is a prevalent functional bowel disorder affecting 5–10% of the global population, predominantly young-to-middle-aged adults. Characterised by chronic abdominal pain and altered bowel habit, IBS carries a significant burden of morbidity, reduced quality of life, and substantial healthcare costs. Dietary modification is the preferred first-line management approach for most patients, with over 80% reporting that food triggers or worsens their symptoms, underscoring the central role of diet in disease management.

Current evidence-based dietary options for IBS, however, remain limited. Clinical guidelines recommend traditional dietary advice (TDA) as the initial intervention, yet only approximately 40% of patients respond. Non-responders are typically escalated to the low FODMAP diet – a regimen restricting fermentable carbohydrates – which achieves clinical response in 50–70% of cases. Despite its efficacy, the low FODMAP diet carries notable limitations, including complexity, dietary restriction, cost, risk of disordered eating, and adverse effects on the intestinal microbiota. Access to the specialist dietetic supervision it requires further strains already stretched healthcare systems, leaving many patients actively seeking alternative dietary strategies – a need consistently highlighted as a top research priority by patients themselves.

The Mediterranean diet (MD) is widely recognised for its broad health benefits, encompassing well-established improvements in cardiometabolic and mental health outcomes, alongside its relative accessibility and ease of long-term adoption. In the context of IBS, cross-sectional studies have reported a lower prevalence of the condition among MD adherents, while recent randomised trial data have begun to substantiate its therapeutic promise. Building on this emerging evidence, this presentation evaluates the MD as a dietary therapy for IBS, investigating whether it represents a balanced, accessible, and effective alternative to current standard approaches.



QASIM AZIZ

Professor of Neurogastroenterology and director of the Wingate Institute of Neurogastroenterology, London - UK

BIOSKETCH

Professor Aziz's research contributed to the identification of the brain representation of human swallowing muscles and has helped to identify the human brain centers that process gastrointestinal pain and their modulation by injury and stress. His research has explored neurophysiological aspects and treatment of conditions such as Non-Cardiac Chest Pain and Non-erosive reflux disease and Irritable Bowel Syndrome. He has performed pioneering research exploring the link between connective tissue disorders and gastrointestinal symptoms.

Professor Aziz was awarded the Sir Francis Avery Jones Research Gold Medal by the British Society of Gastroenterology in 1998 and the Janssen Award for Basic and Clinical Research by the American Gastroenterology Association in 2000. He is past chair of the neurogastroenterology section of the British Society of Gastroenterology and has been a member of the Education and Scientific Committees of United European Gastroenterology and European Society of Neurogastroenterology and Motility. He was until recently the specialty lead for gastroenterology for the North Thames Clinical Research Network and is current President of the European Society of Neurogastroenterology and Motility.

ABSTRACT

Centrally mediated disorders of gastrointestinal pain

Although the management of irritable bowel syndrome (IBS) remains a challenge also for gastroenterologists, Centrally mediated abdominal pain syndrome (CAPS) represents an important subgroup within disorders of gut-brain interaction and is increasingly recognized as a important contributor to chronic gastrointestinal symptom burden. Rather than reflecting ongoing structural injury alone, these disorders arise from altered central processing of visceral signals, leading to amplification of pain perception, impaired descending inhibition, hypervigilance and maladaptive emotional responses. Emerging evidence from neuroimaging, psychophysiological and translational studies has enhanced understanding of the bidirectional interactions between the gut, brain, autonomic nervous system and psychosocial factors that shape symptom expression.

This presentation reviews the evolving conceptual framework of CAPS and highlights their relevance to clinical practice, particularly in patients with irritable bowel syndrome and related disorders. Key clinical features, mechanisms of central sensitization, and factors influencing symptom severity and chronicity will be discussed. The talk will also address practical approaches to diagnosis, emphasizing a positive biopsychosocial assessment rather than reliance on exclusionary investigation strategies alone.

Finally, current and emerging management approaches targeting central pain modulation will be reviewed, including neuromodulators, behavioural and psychological therapies, patient education and multidisciplinary care. Recognition of CAPS offers opportunities for more personalized, mechanism-based treatment strategies aimed at improving patient outcomes and quality of life.



LUKAS BALSIGER

PhD
Kantonsspital Baselland, Liestal - Switzerland

BIOSKETCH

Lukas Balsiger completed medical school at the University of Bern, Switzerland in 2016. He completed his first years of clinical training as a resident in internal medicine from 2016-2020 and completed his medical doctorate (MD) under the supervision of prof. Alain Schoepfer in 2019.

In 2025 he obtained a PhD in biomedical sciences in the group of prof. Jan Tack and prof. Tim Vanuytsel in the translational research group for GI disorders (TARGID) at the KU Leuven in Belgium. His research was focused on nutrient-induced symptoms in patients with Irritable Bowel Syndrome (IBS). In 2024-2025 he was a group member in the laboratory of Alexander Eggel at the university of Bern focusing on basic mechanisms underlying the pathophysiology of food allergies. Currently, he is a resident in training for gastroenterology and hepatology at the Kantonsspital Baselland (Prof. Emanuel Burri), researcher at the university of Basel and honorary research fellow at the KU Leuven.

ABSTRACT

Bloating and distension: Asia vs. Europe (AEGIS Study)

While functional bloating represents a distinct entity, bloating is a common symptom associated with other disorders of gut brain interaction (DGBI). Correctly identifying the underlying categorical diagnosis is important to determine further management.

Using a global cross-sectional dataset, we analyzed whether patient- or symptom-characteristics can aid in identifying the categorical DGBI underlying bloating symptoms.

Among 1074 patients worldwide, 231 (22%) reported bloating as most bothersome symptom. Patients suffering from bloating as most bothersome symptom most frequently fulfilled diagnostic criteria for functional dyspepsia (FD) (107/231, 46%) followed by irritable bowel syndrome (IBS) (56/231, 24%). Stepwise multiple logistic regression identified several factors that were associated with a higher or lower odds of FD: bloating severity (odds ratio (OR) 1.89 for FD), bloating above the umbilicus (OR 4.14 for FD) and proportion of bloating episodes relieved by flatus (OR 0.82 for FD). For the diagnosis of IBS, upper abdominal bloating was associated with a lower odds (OR 0.22 for IBS) and improvement after flatus was associated with a higher odds (OR 1.25 for IBS).

Bloating is frequently reported as the most bothersome symptom and these patients often fulfill diagnostic criteria for FD or IBS. In patients suffering from bloating as their most bothersome symptoms, upper abdominal bloating and improvement after belching can be considered supportive for FD whereas lower abdominal bloating and improvement after flatus can be considered supportive for IBS.



GIOVANNI BARBARA

MD

Professor of Internal Medicine & Gastroenterology

Chief, Division of Gastroenterology & Hepatology, University of Bologna – Italy

BIOSKETCH

Giovanni Barbara is Full Professor of Gastroenterology at the University of Bologna, Italy. He is currently Chair of Gastroenterology and vice Chair of the Department of Medical and Surgical Sciences at the same University. He graduated summa cum laude in medicine at the University of Bologna. He subsequently qualified in internal medicine and then gastroenterology at the same University. He was trained partly in London, UK and completed a post-doctoral research fellowship in neuro-immunology at McMaster University, Canada. Currently, he coordinates a large group of physicians, and scientists involved in the fields of clinical gastroenterology, advanced endoscopy, teaching and clinical as well as translational research.

Professor Barbara's main research interests relate to basic and clinical aspects of disorders of gut-brain interaction and neurogastroenterology, and he has authored indexed peer-reviewed articles and reviews on these topics, published in various biomedical journals, including Gastroenterology, Gut, the Journal of Clinical Investigation and Trends in Pharmacological Sciences, Nature. He is, or has been, a member of the Editorial Boards of Gastroenterology, Gut, the American Journal of Gastroenterology, Neurogastroenterology and Motility, the American Journal of Physiology and other international scientific journals.

Professor Barbara has received national and international awards including those from the American Gastroenterological Association, the Functional Brain Gut Research Group, the European Society of Neurogastroenterology and Motility and the Master Award in Gastroenterology from the American Gastroenterological Association.

He is currently member of the Board of Directors of the Rome Foundation, Past-President of the European Society of Neurogastroenterology and Motility (ESNM) and currently Chair of the Gut Microbiota and Health Section of ESNM.

ABSTRACT

Gut microbiota and probiotics for the integrity of the intestinal epithelial barrier

The intestinal microbiota is a key determinant of gastrointestinal homeostasis and plays a central role in preserving the integrity of the intestinal barrier. This barrier comprises interconnected microbial, mucus, epithelial, and vascular components that regulate host-microbe interactions and prevent the translocation of luminal antigens and microorganisms. Multiple environmental and host-related factors, including diet, medications, infections, and chronic diseases, can disrupt microbial ecology, leading to dysbiosis and barrier dysfunction. Such alterations have been implicated in the pathophysiology of disorders of gut-brain interaction, particularly irritable bowel syndrome (IBS).

Recent studies have demonstrated that patients with IBS exhibit increased epithelial and vascular permeability, low-grade inflammation, and evidence of microbial translocation, supporting a role for barrier impairment in symptom generation. Probiotics have emerged as a potential strategy to modulate the microbiota and reinforce barrier function through multiple mechanisms, including the production of bioactive metabolites, immune regulation, and enhancement of epithelial tight junction integrity.

Among available probiotic formulations, a combination of *Lactobacillus rhamnosus* LR32, *Bifidobacterium lactis* BL04, and *Bifidobacterium longum* BB536 (Serobioma®) has shown promising effects in preclinical and translational studies. In vitro, Serobioma® reduced epithelial permeability and inflammatory responses. More recently, exposure of Caco-2 monolayers to supernatants derived from colonic biopsies of IBS patients demonstrated that Serobioma® significantly counteracted barrier dysfunction and restored the expression of key tight-junction proteins, including ZO-1, occludin, and JAM-A. These findings support the concept that targeted microbiota modulation may contribute to restoring intestinal barrier integrity and represent a promising avenue for future personalized microbiome-based therapies.

Therapeutic approaches for gut barrier dysfunction

Irritable Bowel Syndrome (IBS) is a chronic disorder of gut-brain interaction characterized by the complex interplay of psychological, microbial, immune, and barrier-related factors. Increasing evidence indicates that intestinal barrier dysfunction is a key pathophysiological mechanism in a substantial proportion of patients. Alterations of the mucus, epithelial, vascular, and microbial barriers lead to increased permeability, microbial translocation, mucosal immune activation, and symptom generation. Barrier dysfunction has been associated with abdominal pain, anxiety, depression, and reduced quality of life.

Therapeutic strategies aimed at restoring barrier integrity are therefore of growing interest. Dietary interventions, including a low-FODMAP diet and adequate fiber intake, may reduce immune activation and support mucus layer homeostasis. Specific probiotics, such as *Escherichia coli* Nissle 1917 and multi-strain formulations containing *Lactobacillus* and *Bifidobacterium* species, have demonstrated the ability to improve tight junction function, reduce epithelial permeability, and attenuate inflammation in experimental and translational models. Furthermore, psychological stress can impair barrier function through mast cell-dependent mechanisms, highlighting the importance of integrated therapeutic approaches. Overall, targeting intestinal permeability represents a promising strategy for personalized IBS management and may contribute to improved clinical outcomes in selected patients.



GUY BOECKXSTAENS

Professor, KU Leuven / UZ Leuven, Leuven – Belgium

BIOSKETCH

Prof. Boeckxstaens obtained his medical degree in 1987 and his PhD degree in 1991. In 1994, he completed his clinical training in Internal Medicine / Gastroenterology and accepted a staff position in the Department of Gastroenterology & Hepatology at the Academic Medical Center in Amsterdam, The Netherlands. In 2005, he became Professor of Neurogastroenterology at the Academic Medical Center and was appointed co-chair of the department of Gastroenterology and head of Gastrointestinal Research. In 2007, he accepted a full professorship in Medicine at the University of Leuven (Belgium) in the department of Gastroenterology. He received several national and international prizes, including the FWO Excellence Award 2020 for Clinical Biomedical Sciences, and received the prestigious European Research Council (ERC) Advanced Grant in 2014 and in 2019. He has been Associate Editor of *Gut* during 17 years until 2025, has published over 400 peer-reviewed manuscripts and has an H-index of 82. The scientific expertise of the research group of Prof. Boeckxstaens relates to neurogastroenterology and neuro-immune interactions in the gastrointestinal tract. The mechanisms leading to diseases such as achalasia, gastroesophageal reflux disease, irritable bowel syndrome, and postoperative ileus have been the main topics of interest over the past 30 years.

ABSTRACT

Mast cells activation in IBS

IBS patients suffer from abnormal abdominal pain, or visceral hypersensitivity (VHS), associated with altered bowel habits in the absence of an organic detectable cause. The pathophysiology of the disease is incompletely understood but immune activation, and particularly chronic mast cell activation, is increasingly recognized to alter the function of visceral pain sensing nerves or nociceptors leading to abnormal pain signalling. By releasing increased levels of mediators, including histamine, mast cells sensitize enteric nociceptors and lead to VHS development. Recently, we reported clinical improvement during treatment with the histamine 1 receptor antagonist ebastine, however a significant proportion of patients failed to respond. To discover alternative therapeutic targets, we decided to get more insight in potential alterations in IBS mast cells using single cell RNA sequencing. We obtained novel information on human gut mast cell heterogeneity in health and identified alterations in signalling pathways in IBS. Of interest, a novel nociceptive mediator was identified and characterized, which is currently further validated and will hopefully represent a new target to treat the remaining non-responders.



MICHAEL CAMILLERI

M.D., D.Sc.

(C.E.N.T.E.R.), Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota - USA

BIOSKETCH

Michael Camilleri, M.D., D.Sc., is Professor of Medicine, Pharmacology, and Physiology at Mayo Clinic College of Medicine and Science, and Consultant in the Division of Gastroenterology and Hepatology at Mayo Clinic in Rochester, Minnesota. His research interests include clinical enteric neurosciences, gut neurohormonal control, obesity, irritable bowel syndrome, and pharmacology/pharmacogenomics. He has published >1300 articles (H index 175 and >110k citations). He has received numerous awards and honors including the Joseph B. Kirsner Award and the Julius Friedenwald Medal from the American Gastroenterological Association, and the Ismar Boas Medal from the German Society of Digestive and Metabolic Disease. He has mentored more than 80 national/international postdoctoral fellows/scientists. He is Past-President of the American Gastroenterological Association and the American Neurogastroenterology and Motility Society, the founding editor of Clinical Gastroenterology and Hepatology, and is currently an associate editor of Gut.

ABSTRACT

Bile acid metabolism and symptom generation, diagnosis and management

The objectives of this talk are to provide an update on pathophysiology, classification, mechanisms, epidemiology, clinical presentation, diagnosis, treatment and colon cancer risk of bile acid (BA) diarrhea (BAD). BA are actively absorbed in distal ileum with 5% passing into the colon. Enterohepatic cycling occurs 4-6 times/day. Excessive colonic di- α -hydroxy BAs, CDCA and DCA stimulate motility, transit, fluid secretion and increase mucosal permeability. Patients with BAD had higher Firmicutes to Bacteroidetes ratio, with microbiota showing decreased dehydroxylation and sulfatases. Ascending colon biopsies showed upregulation in barrier-weakening genes (CLDN2) and immune activation. There are increased total and primary BAs in the stool of IBS patients who have positive bio films over the colonic mucosa. BAD is associated with more frequent, more liquid bowel movements, urgency, incontinence, need for proximity to toilet, and impaired quality of life.

Diagnosis is achieved with 75SeHCAT retention, fasting serum 7 α C4, or 48 hour excretion of fecal BAs. Valid screening tests are fasting 7 α C4 with fecal % primary BA or total BA concentration in a single stool with or without daily watery stools over 6 days.

RCT of colestevlam, and meta analysis of BA sequestrants (BAS) confirms efficacy and safety. Liraglutide may have greater benefit than colestevlam; liraglutide resulted in remission of BAD refractory to BAS

Two epidemiological studies showed a small increase in total GI cancers in SeHCAT-proven BAD. Previously, stool BA concentration correlated with adenomas size, severity of epithelial dysplasia and progression from adenoma to carcinoma but not with carcinogenesis.

These advances confirm the importance of positive diagnosis and treatment of BAD.



LIN CHANG

MD

Professor of Medicine and Vice-Chief of the Vatche and Tamar Manoukian Division of Digestive Diseases, Department of Medicine at the David Geffen School of Medicine at UCLA – USA

BIOSKETCH

Lin Chang, MD, is Professor of Medicine and Vice-Chief of the Vatche and Tamar Manoukian Division of Digestive Diseases at the David Geffen School of Medicine at UCLA. She is the Walter and Shirley Wang Endowed Chair in Integrative Digestive Health. She serves as Director of the Walter and Shirley Wang Center for Integrative Digestive Health, Co-Director of the G. Oppenheimer Center for Neurobiology of Stress and Resilience, and Director of the Clinical Studies and Database Core for the Goodman-Luskin Microbiome Center at UCLA. She is also Program Director of the UCLA Gastroenterology Fellowship Program. Dr. Chang's clinical and research expertise focuses on disorders of gut-brain interaction (DGBI), including irritable bowel syndrome (IBS), with particular emphasis on stress, early life adversity, sex differences, and epigenetic mechanisms underlying symptom pathophysiology and treatment response. She serves on the Rome Foundation Board of Directors and previously served as President of the American Neurogastroenterology and Motility Society and Clinical Councilor of the American Gastroenterology Association Governing Board. She is currently an Associate Editor of Gastroenterology.

ABSTRACT

Overlapping Conditions and the Role of Gender

Irritable bowel syndrome (IBS) and other disorders of gut-brain interaction (DGBI) frequently overlap with one another, with organic gastrointestinal (GI) diseases, other DGBI, mood, and somatic symptom disorders. These overlapping conditions are associated with greater symptom burden, increased disease severity, poorer quality of life, and more complex clinical management. This presentation will review the clinical overlap between DGBI and organic GI conditions, including inflammatory bowel disease in remission and celiac disease, as well as other DGBI and extraintestinal conditions. Persistent IBS-like symptoms in patients with controlled organic disease may reflect mechanisms beyond overt inflammation, including visceral hypersensitivity, central sensitization, immune activation, mucosal barrier dysfunction, gut microbiome alterations, and altered brain-gut signaling. Sex and gender effects have been studied DGBI, predominantly IBS, and include differences in prevalence, symptom patterns, comorbidities, reproductive and hormonal influences, and emerging genetic findings. The association of endometriosis and IBS is a clinically important overlap characterized by increased IBS risk and prevalence, with proposed shared mechanisms involving sensitization, inflammation, mast cell activation, and dysbiosis. Considering overlapping conditions and sex/gender effects, practical diagnostic and therapeutic implications are important, emphasizing evidence-based evaluation for active organic disease or structural complications, followed by a personalized, symptom-directed, multidisciplinary approach incorporating dietary therapy, pharmacologic treatments, neuromodulators, and brain-gut behavior therapies. Recognizing overlapping conditions and sex/gender-related factors can improve diagnostic accuracy and support more individualized care for patients with IBS and other DGBI.

ABSTRACT

Brain-Gut Behavior Therapies

Disorders of gut-brain interaction (DGBI), including irritable bowel syndrome (IBS), are multifactorial conditions shaped by bidirectional gut-brain interactions, altered gastrointestinal physiology, central nervous system processing, stress responsiveness, psychological symptoms, early-life adversity, and behavioral coping patterns. Stress-sensitive symptoms, visceral anxiety, hypervigilance, somatic symptom burden, and comorbid pain or mood disorders are common in patients with DGBI and may amplify symptom severity, impair quality of life, and contribute to healthcare utilization. Brain-gut behavior therapies (BGBT) target these mechanisms by improving self-efficacy, reducing maladaptive symptom-related thoughts and behaviors, modulating stress responses, and decreasing central amplification of pain and visceral sensations. There are clinical features that identify patients most likely to benefit from BGBT, including stress-responsive gastrointestinal symptoms, symptom-related anxiety, avoidance behaviors, maladaptive coping, refractory or moderate-to-severe symptoms, and significant quality-of-life impairment. Evidence supports cognitive behavioral therapy, gut-directed hypnotherapy, mindfulness-based interventions, self-management programs, and psychodynamic-interpersonal therapy for IBS and related DGBI, with attention to treatment targets and appropriate patient selection. Distinguishing candidates for gut-directed, skills-based therapy from those requiring primary psychological or psychiatric management is vital. Practical strategies for integrating BGBT into multidisciplinary care include optimal referral timing based on predominant abdominal pain, psychological symptom burden, and gastrointestinal-specific anxiety. Recognizing the role of brain-gut mechanisms and matching patients to appropriate behavioral interventions can enhance symptom control, improve functioning, and support more comprehensive care for patients with DGBI.



STEPHEN COLLINS

Professor of Medicine, Farncombe Institute
Faculty of Health Sciences, McMaster University - Canada

BIOSKETCH

Dr. Stephen M Collins obtained his medical training at University College, London UK and his gastroenterology training at McMaster University, Canada before completing 3 years of research training in cell biology at the Digestive Diseases Branch at NIH. He has been a staff gastroenterologist at McMaster University since 1981 and Director of the Intestinal Diseases Research Unit from 1983-1993, and Head of the Division of Gastroenterology since 1993-2006. He is past president of the Canadian Association of Gastroenterology. His current research focuses on the roles of microbes in the initiation and maintenance of functional gastrointestinal disorders. He is currently Director of the Farncombe Research Institute and Associate Dean for Research at McMaster University.

ABSTRACT

Advances in understanding how bacterial products influence brain and behavior

Psychiatric comorbidity is common in IBS. Preclinical studies have shown that IBS-associated psychiatric morbidity, such as anxiety or depression, can be transferred to mice via the microbiota. The underlying mechanism is poorly understood but likely involves multiple pathways, including peripheral neural systems and soluble immune and microbial products. These mediators must survive local consumption and degradation en route to the brain, where they must then cross the blood-brain barrier. Recent interest has focused on outer membrane vesicles (OMVs) produced by Gram-negative gut bacteria. While these vesicles are critical for the survival of commensal bacteria, they also signal to the host. They consist of an outer double lipid membrane whose proteins and phospholipids act as signaling molecules. The membrane also protects the internal cargo, which contains a variety of cytoplasmic molecules and DNA fragments. Recent preclinical studies have shown that oral administration of these vesicles influences brain function and behavior via two mechanisms. One is by increasing the permeability of the blood-brain barrier, enabling OMVs to release cargo in the brain, resulting in alterations in brain chemistry and function. The other route is activation of the vagus nerve via Toll-like receptors. OMVs require further investigation as a critical component of the microbiota-gut-brain axis and as putative mediators of psychiatric comorbidity in IBS. As technology improves OMV stability, it offers novel therapeutic approaches to managing altered brain function in the context of IBS and behavioral disorders.



MAURA CORSETTI

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BIOSKETCH

Maura received her residency (2000) and PhD (2004) from the University of Milan in Italy. She worked for eight years at San Raffaele University Hospital in Milan. She then moved to Belgium, where she also spent part of her PhD, to work in Prof. Jan Tack's laboratory as Senior Research Supervisor (2012-2016).

In 2016, she was appointed Associate Professor of Gastroenterology. Maura directs the Neurogastroenterology Unit and the GI Motility lab and is a referring consultant for functional disorders of the upper and lower gastrointestinal tract at the Nottingham Digestive Diseases Biomedical Research Centre.

She is a member of the Rome Foundation Board of Directors, Co-Chair of the Rome V Committee on Functional Bowel Disorders, and Editor-in-Chief of Neurogastroenterology and Motility (official journal of the European and American Association of Neurogastroenterology and Motility). She is ESNM representative to the Scientific Committee and Chair of the Postgraduate Teaching Course at United European Gastroenterology (UEG).

ABSTRACT

Clinical pearls in history and symptom assessment

Irritable Bowel Syndrome (IBS) stands out as one of the most commonly encountered disorders of gut-brain interaction (DGBI). This condition significantly affects an individual's quality of life, as it encompasses a range of debilitating symptoms, including abdominal pain, bloating, and irregular bowel habits. Given that the diagnosis of IBS relies heavily on a thorough understanding of the patient's symptoms and clinical history, it becomes particularly essential for clinicians to hone their skills in collecting comprehensive and relevant information during patient consultations.

This lecture aims to equip healthcare professionals with the necessary tools to assess IBS symptoms effectively. It will delve into the nuances of collecting an IBS-focused clinical history. Clinicians will learn to use targeted questioning strategies, which will help in elucidating the symptom pattern, potential triggers, and psychosocial influences that may play a role in the manifestation and exacerbation of IBS.

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ABSTRACT

Food intolerance revisited: the GenMalCarb study

Food intolerance, including food aversion, is responsible for the majority of adverse reactions to food and is estimated to affect around 20% of the population (1). Among individuals with irritable bowel syndrome (IBS), a condition affecting approximately one in ten people, the prevalence of self-reported food intolerance may reach 80% (2).

Previous research has identified a subgroup of patients with “organic” IBS who carry hypomorphic (partially functional) variants of the sucrase-isomaltase (SI) gene (3,4). These genetic variants are associated with impaired carbohydrate digestion and absorption, leading to symptoms such as diarrhea, abdominal pain, and bloating—hallmark features of IBS. Similar to congenital sucrase-isomaltase deficiency (CSID), the SI variant Phe15Val has been shown to exhibit reduced disaccharidase activity in vitro. In populations of European ancestry, the expected prevalence of single and double carriers of this variant is approximately 40% and 10%, respectively. These findings suggest that genetic variation within the SI gene contributes to a spectrum of carbohydrate malabsorption disorders, ranging from mild IBS-like symptoms to severe manifestations characteristic of CSID.

Until recently, breath testing was the primary method available for investigating carbohydrate maldigestion. However, this approach cannot determine whether gas production occurs in the small intestine, the colon, or both. Furthermore, it provides limited information about other physiological factors that may contribute to symptom generation, such as intestinal distension or changes in intraluminal water content. Researchers in Nottingham have developed a multiparametric magnetic resonance imaging (MRI) platform that has been successfully applied to the study of IBS (5,6).

This talk will present the GenMalCarb study, a comprehensive three-part investigation designed to: (1) determine the prevalence of SI gene variants associated with carbohydrate malabsorption in a large IBS cohort; (2) characterize the functional effects of these variants in vitro; and (3) evaluate their in vivo physiological consequences using MRI.

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CESARE CREMON

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BIOSKETCH

Cesare Cremon graduated summa cum laude in Medicine from the University of Bologna, Italy, where he subsequently completed his specialization in Internal Medicine. He is currently involved in clinical gastroenterology, diagnostic and therapeutic endoscopy, teaching, and research at the IRCCS, Azienda Ospedaliero-Universitaria di Bologna, St. Orsola Hospital.

His main research interests focus on the basic and clinical aspects, as well as the treatment, of functional and organic gastrointestinal disorders, neurogastroenterology, gut microbiota, and diverticular disease. He has authored more than 115 indexed peer-reviewed articles and reviews in these fields (cumulative Impact Factor >800; Google Scholar H-index: 52), published in leading biomedical journals including Gastroenterology, Gut, American Journal of Gastroenterology, and Alimentary Pharmacology & Therapeutics.

Dr. Cremon serves, or has served, as a reviewer for several international biomedical journals, including Annals of Internal Medicine, Gut, Nature Reviews Gastroenterology & Hepatology, Alimentary Pharmacology & Therapeutics, Inflammatory Bowel Diseases, Neurogastroenterology & Motility, and Digestive and Liver Disease.

He is currently Secretary of the Italian Society of Neurogastroenterology and Motility (SINGEM) and is a member of several scientific societies, including the Società Medico-Chirurgica di Bologna and the Italian Society of Gastroenterology (SIGE).

Dr. Cremon has received several national and international awards, including the Best Communication Awards at the 10th and 13th GISMAD Italian Congresses (2002 and 2008), the Best Poster Award at the 111th Congress of the Italian Society of Internal Medicine (SIMI) in 2010, and the Poster of Distinction Award at Digestive Disease Week 2013 (Orlando, FL, USA). He is listed among the Top Italian Scientists in Clinical Sciences in the field of Gastroenterology.

ABSTRACT***Traditional therapies vs. nutraceuticals***

Irritable bowel syndrome (IBS) remains one of the most prevalent and clinically challenging disorders of gut-brain interaction (DGBI), characterized by heterogeneous pathophysiological mechanisms and symptom features, with a substantial impairment in quality of life largely related to its complex and often challenging management. Current evidence-based management is primarily based on international guideline recommendations, which suggest a multidimensional and symptom-oriented approach including dietary interventions, psychological therapies, and pharmacological treatments tailored to IBS subtype and predominant symptoms.

Conventional therapies, including fiber supplementation, antispasmodics, laxatives, secretagogues, antidiarrheals, neuromodulators, and microbiota-targeted strategies, have demonstrated variable but overall significant efficacy in randomized controlled trials and continue to represent the basis of IBS management (Corsetti M, Shin A, Lacey BE, et al. Bowel Disorders. *Gastroenterology*. 2026;170:1261–1282).

Alongside these established approaches, growing attention has been directed toward nutraceuticals and functional foods as potential adjunctive or alternative therapeutic options. Although the evidence remains less standardized and frequently limited by heterogeneity in study design, several compounds, including prebiotics, probiotics, postbiotics, synbiotics, peppermint oil, polyphenols, herbal formulations, and bioactive dietary components, have shown promising effects on abdominal pain, bloating, bowel habits, and patient-reported outcomes (Marasco G, Cremon C, Salvi D, et al. Functional Foods and Nutraceuticals in Irritable Bowel Syndrome. *J Clin Med*. 2025;14:1830).

The future management of IBS will likely require a more personalized and integrative therapeutic model, balancing robust evidence from traditional treatments with emerging data on nutraceuticals, while considering individual symptom patterns, microbiota signatures, dietary habits, and patient preferences.



MAURO D'AMATO

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BIOSKETCH

Mauro D'Amato is Professor of Medical Genetics at the Department of Medicine and Surgery at LUM University in Casamassima - Italy, and Ikerbasque Research Professor and Head of the Gastrointestinal Genetics Lab in CIC bioGUNE, Derio - Spain. His career has developed through an international trajectory, holding research and academic positions at several institutions including the Wellcome Trust Center for Human Genetics in Oxford – UK, the Karolinska Institutet in Stockholm – Sweden, Biodonostia HRI in San Sebastian – Spain and Monash University in Melbourne – Australia. Prof D'Amato has >25 years research experience in the field of human genetics and complex diseases, with activities most recently geared towards a translational application for therapeutic precision in gastroenterology. His team, the Gastrointestinal Genetics Laboratory, combine leading expertise in genomic, computational and pre-clinical research, and have linked specific genes and pathogenetic mechanisms to a number of gastrointestinal diseases like inflammatory bowel disease (IBD), microscopic colitis (MC) and irritable bowel syndrome (IBS). He is also the coordinator of the bellygenes initiative on the genetics of IBS, and biobank-scale research from his lab contributes to several consortia and collaborative networks studying the genetic makeup of millions of people across EU, USA and Australasia. Professor D'Amato has an H-index of 81, has edited 2 books and published extensively in the field of human genetics and gastrointestinal disease; he provides expert feedback to international journals and research funding agencies, and has supervised more than 40 PhD students and postdocs..

ABSTRACT

Genetics of IBS across definitions, subtypes, ethnicities, sexes and endophenotypes

Irritable bowel syndrome (IBS) is a heterogeneous disorder of gut-brain interaction for which diagnosis remains symptom-based and mechanism-based treatments are limited. Large population biobanks now offer an opportunity to interrogate IBS biology at scale, across alternative clinical definitions, symptom subtypes, ancestries, sexes and quantitative endophenotypes. In this lecture, I will summarise recent genome-wide studies from our group that use biobank-scale data to move from association signals towards clinically interpretable mechanisms. A cross-definition GWAS of IBS in almost 2.8 million individuals from 22 cohorts showed that ICD-coded, self-reported and Rome-based IBS capture highly overlapping polygenic liability, despite marked differences in prevalence and ascertainment. The study identified 35 independent IBS risk loci, highlighted partially distinct signals across constipation-, diarrhoea- and mixed-predominant subtypes, and reinforced the central role of neurogastrointestinal pathways. Unexpectedly, convergent genetic correlation, causal-inference and fine-mapping analyses also implicated cardiometabolic biology, particularly triglyceride regulation and the GCKR pathway, as a component of IBS susceptibility. Complementary work on stool frequency, a measurable proxy for intestinal transit, identified 21 loci across European and East Asian participants and demonstrated genetic links with IBS, psychiatric and cardiovascular traits. Fine-mapping prioritised bile acid, cholinergic and thiamine-related mechanisms, with dietary vitamin B1 intake interacting with genotype to influence stool frequency. Together, these studies suggest that genetics can help deconstruct IBS into tractable biological axes and support future patient stratification, biomarker discovery and personalised nutritional or pharmacological interventions.



ROBERTO DE GIORGIO

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BIOSKETCH

The primary research interests of Roberto De Giorgio focus on gastrointestinal neurology and neuropathophysiology with primary emphasis to severe dysmotility disorders and functional digestive syndromes. He started his scientific career in 1988 after he completed his residency in Internal Medicine and was awarded with a post-doctoral fellowship at CURE/Digestive Disease Center, UCLA School of Medicine, Los Angeles, California, USA. At CURE/UCLA, he held a post-doctoral fellowship / senior assistant physiologist position acquiring experience in the knowledge of the intrinsic innervation of the gut, i.e. the enteric nervous system. In 1994, he moved back to University of Bologna where he accomplished his scientific interests. In 2017, Roberto De Giorgio moved to University of Ferrara where he is full Professor of Medicine, chief of Internal Medicine Unit, Director of Emergency Medicine Specialty School and consultant of Gastroenterology. Roberto De Giorgio is member of several national and international Societies and Journals' scientific boards and authored / co-authored several peer-review articles as well as he was / is the recipient of many research grant projects in neurogastroenterology / gastroenterology.

ABSTRACT

The Gluten Spectrum and IBS

The clinical intersection between irritable bowel syndrome (IBS) and gluten-related disorders represents a complex challenge in modern gastroenterology. Patients with gluten-related disorders, i.e. celiac disease (CeD), wheat allergy, and non-celiac gluten/wheat sensitivity (NCG/WS), show gastrointestinal (GI) and extra-GI symptoms overlapping those of IBS. My presentation will address this diagnostic dilemma highlighting the key pathophysiological features and dietary management strategies in CeD and NCG/WS overlapping IBS.

Recent clinical evidence suggests that a substantial subset of patients with IBS experience significant symptom relief following gluten-free diet (GFD). However, identifying the exact dietary trigger remains elusive. While gluten is traditionally considered crucial for symptom generation, wheat contains other bioactive components, including fermentable oligosaccharides, disaccharides, monosaccharides, and polyols (FODMAPs) - specifically fructans - and amylase-trypsin inhibitors, which can activate innate immunity and affect gut barrier permeability thereby evoking abdominal pain, bloating / distension and bowel habit changes. As a result, distinguishing between true NCG/WS and FODMAP-sensitive IBS is difficult due to the lack of validated biomarkers. This diagnostic "gray area" often leads to self-misdiagnosis and overly restrictive, inappropriate and potentially harmful dietary regimens.

Navigating the gluten-spectrum-IBS continuum requires a structured, patient-centric approach. Physicians should prioritize ruling out CeD before initiating dietary changes, followed by targeted, temporary elimination protocols. The diagnosis of NCG/WS should be established in referral centers and possibly documented by a double-blind gluten / wheat vs. placebo cross over trial, thus avoiding unnecessary GFD. Future research must focus on identifying specific biomarkers to differentiate NCG/WS from IBS, ultimately enabling personalized nutritional interventions.



MAHESH DESAI

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BIOSKETCH

Dr. Mahesh S. Desai earned his BSc and MSc (2005) from the University of Pune, India, and a PhD (2008) from the International Max Planck Research School, Marburg, Germany. He completed postdoctoral work at the Max Planck Institute for Terrestrial Microbiology (Marburg), the University of Göttingen, the University of Luxembourg, and the University of Michigan Medical School with Prof. Eric C. Martens, studying how dietary fiber shapes mucin-degrading gut bacteria. Since 2015, he has led the Nutrition, Microbiome and Immunity group at the Luxembourg Institute of Health (<https://eim.lih.lu>). His lab investigates microbiome-mediated mechanisms that connect diet and disease via interactions with the colonic mucus barrier, focusing on the health impacts of fiber-deprived microbiomes. Through dietary-fiber intervention cohorts, the team aims to identify microbial biomarkers that can be targeted through dietary therapeutics, ultimately engineering the gut microbiome to strengthen the mucosal barrier, reduce pathogen susceptibility, and mitigate disorders such as inflammatory bowel disease, food allergy, and multiple sclerosis.

ABSTRACT

Fiber modulation of gut microbiota and biofilms

Diets lacking dietary fiber have been shown to promote microbiome-mediated erosion of the colonic mucus barrier in mice; however, their effects in humans remain poorly defined. To identify drivers of intestinal barrier dysfunction, we conducted a randomized 2×2 crossover study in healthy adults receiving controlled high-fiber (HF) or low-fiber (LF) diets. Despite marked interindividual variation in microbiome responses, LF intake was associated with altered systemic cytokine and metabolic profiles, increased abundance of specific mucin-degrading bacteria, and elevated activity of mucin-targeting enzymes. Notably, both the abundance and enzymatic activity of endo- β -N-acetylgalactosaminidase (GH101) produced by *Mediterraneibacter torques* were consistently increased following LF intervention. In vitro culture and cross-feeding experiments revealed that LF-responsive microbial biomarkers, including taxa not classically considered mucin degraders, cooperatively metabolize mucin-derived sugars. To gain mechanistic insight into the functional consequences of LF-associated microbes, we employed a mouse model of inflammatory bowel disease, in which *M. torques* exacerbated colitis under fiber-deprived conditions. Collectively, these microbial biomarkers may represent targets for personalized dietary or postbiotic interventions for diseases such as irritable bowel syndrome and serve as early indicators of compromised gut barrier integrity.



SIGRID ELSENBRUCH

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BIOSKETCH

Prof. Dr. Sigrid Elsenbruch is Director of the Department of Medical Psychology and Medical Sociology and the Center of Medical Psychology and Translational Neuroscience at the Medical Faculty of Ruhr University Bochum, Germany. Her interdisciplinary research focuses on psychological and neurobiological mechanisms underlying visceral pain and altered interoception in health and disease, particularly in disorders of gut-brain interaction such as irritable bowel syndrome, as well as in inflammatory bowel diseases.

Supported by the German Research Foundation (DFG), her work combines experimental pain and stress research with cognitive neuroscience and psychoneuroendocrinology to investigate visceral hypersensitivity, pain-related learning and memory processes, treatment expectations, and placebo/nocebo mechanisms. She is Principal Investigator in the Collaborative Research Centers SFB/TRR 289 "Treatment Expectation" and SFB 1280 "Extinction Learning".

Her research has contributed to a better understanding of cognitive and affective mechanisms underlying symptom perception and treatment responses in disorders of gut-brain interaction, with implications for mechanism-based and personalized approaches to care. Prof. Elsenbruch is a Rome Foundation Fellow and contributed to the Rome Working Team Report on Brain-Gut Behavior Therapies for Disorders of Gut-Brain Interaction. She also served as Co-Chair of the Rome Chapter Committee on Biopsychosocial Aspects of Adult and Pediatric Disorders of Gut-Brain Interaction.

ABSTRACT

Central or peripheral mechanisms underlying abdominal pain

Abdominal pain in disorders of gut-brain interaction (DGBI) emerges from dynamic interactions between peripheral and central mechanisms along the gut-brain axis. While visceral hypersensitivity is a well-established pathophysiological mechanism that has driven substantial translational research, current biopsychosocial models increasingly emphasize the importance of cognitive-affective and stress-related processes shaping symptom perception and illness behavior.

This presentation will provide an overview of psychobiological mechanisms underlying abdominal pain with a particular focus on fear, hypervigilance, and avoidance behavior as interacting yet distinct processes contributing to the generation and maintenance of chronic visceral pain and symptom-related disability. Findings from experimental research in healthy individuals and patients with DGBI, including fear conditioning and extinction studies, will illustrate how pain-related learning, threat expectancy, attentional processes, and other nocebo-related mechanisms contribute to symptom amplification and maladaptive behavioral responses. Accumulating evidence suggests that fear-driven hypervigilance represents a mechanistically relevant pathway that is partially independent of visceral hypersensitivity and directly linked to symptom-related distress, avoidance, and impaired daily functioning. The clinical implications of these mechanisms for cognitive-behavioral treatment approaches and personalized interventions will be highlighted, particularly regarding strategies targeting maladaptive avoidance and symptom-focused attention. A better mechanistic understanding of fear-hypervigilance-avoidance processes may help refine treatment approaches for patients with DGBI and other chronic conditions characterized by disabling gastrointestinal symptoms.



WILLIAM FUSCO

MD
Policlinico A. Gemelli, Roma - Italy

BIOSKETCH

William Fusco, MD, is a Gastroenterology at Policlinico A. Gemelli (Rome, Italy) with clinical and research interests in disorders of gut-brain interaction and gut microbiota. His academic work focuses on translational gastroenterology, and the development of patient-centered approaches to gastrointestinal disorders, with a specific focus for dysbiosis-related DGBI.

ABSTRACT

Peppermint Oil and irritable bowel syndrome

Peppermint oil: Peppermint oil is one of the most extensively studied phytotherapeutic agents in disorders of gut-brain interaction (DGBI), particularly in irritable bowel syndrome (IBS). Derived from *Mentha piperita*, its principal active constituent, menthol, exerts multiple pharmacological effects, with potential anti-inflammatory and antimicrobial actions. These mechanisms target key pathophysiological processes involved in DGBI, such as visceral hypersensitivity, altered motility, and dysregulated gut-brain signaling.

Clinical trials and meta-analyses have consistently demonstrated that enteric-coated peppermint oil formulations are superior to placebo in improving global IBS global symptoms, functional dyspepsia and abdominal pain, with favorable numbers needed to treat and a generally good safety profile. Consequently, several international guidelines recommend peppermint oil as a therapeutic option for IBS symptom management and other DGBIs.

Auto-brewery syndrome

Auto-Brewery Syndrome (ABS), also known as gut fermentation syndrome, is a rare and likely underrecognized condition characterized by endogenous ethanol production through microbial fermentation of dietary carbohydrates within the gastrointestinal tract. Although its true prevalence remains unknown, increasing awareness and improved diagnostic approaches have led to a growing number of reported cases worldwide. The pathogenesis of ABS is multifactorial and typically involves intestinal dysbiosis, with overgrowth of fermenting yeasts, as well as certain bacterial taxa capable of ethanol production.

The clinical presentation ranges from episodic neurocognitive and behavioral symptoms resembling alcohol intoxication to chronic fatigue, cognitive impairment, and reduced quality of life. Diagnosis remains challenging and requires careful exclusion of exogenous alcohol consumption. Key diagnostic tools include detailed clinical history, microbiological investigations, and supervised carbohydrate challenge tests with serial blood or breath ethanol measurements.

Management is based on a multidisciplinary approach combining dietary carbohydrate restriction, targeted antimicrobial or antifungal therapy, correction of underlying predisposing factors, and microbiota-directed interventions. Emerging evidence suggests a potential role for probiotics and fecal microbiota transplantation in selected refractory cases.



MADHUSUDAN GROVER

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BIOSKETCH

Dr. Grover is the director of the GI motility group at Mayo Clinic in Rochester, Minnesota. As a physician-scientist, Madhu heads the Gut Barrier Function Laboratory housed within the Enteric NeuroScience Program. His NIH-funded laboratory is interested in pathophysiology of irritable bowel syndrome and gastroparesis. He is the chair of the Rome Foundation Biomarker core, member of the Rome Foundation global board of directors, serves on the steering and executive committees of the NIH gastroparesis clinical research consortium. Madhu was also recently appointed as editor-in-chief of Nature family journal *Npj Gut and Liver* as well as inducted as a member of the American Society for Clinical Investigation.

ABSTRACT

Recent pathophysiology insights relevant for IBS symptom generation

Over the past decade, there has been substantial progress in understanding the luminal environment of the gastrointestinal tract and its interactions with the host, in the context of irritable bowel syndrome (IBS). Increasing evidence supports the central role of diet, the gut microbiome, intestinal permeability, immune activation, and neuroenteric signaling in IBS symptom generation. Dietary triggers, including fermentable carbohydrates and food-related metabolites, have received considerable attention as important modulators of symptoms and patient quality of life.

At the same time, advances in multi-omics technologies have greatly expanded our understanding of the gut microbiome and its functional outputs in IBS. While no single microbial “signature” has consistently defined IBS across populations, recent studies have identified reproducible alterations in microbial diversity, metabolite production, bile acid metabolism, protease regulation, and host-microbe interactions that may contribute to symptom heterogeneity and treatment response.

Research has also highlighted the importance of the intestinal barrier and mucosal immune system in IBS pathophysiology. Low-grade inflammation, altered epithelial permeability, mast cell activation, and dysregulated enteroendocrine signaling are increasingly recognized as contributors to visceral hypersensitivity and abnormal gut-brain communication. These findings have further refined the concept of the microbiome-gut-brain axis as a key framework for understanding IBS pathogenesis.

Collectively, these advances are driving the development of more precise diagnostic tools and targeted therapeutic strategies, including dietary interventions, microbiome-directed therapies, neuromodulators, and approaches aimed at restoring luminal homeostasis.



FRANCISCO GUARNER

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BIOSKETCH

Professor Francisco Guarner graduated in Medicine at the University of Barcelona and trained in Internal Medicine, Gastroenterology and Hepatology, at the Hospital Clinic; Ph.D. degree in Medicine at the University of Navarra. Visiting Scientist and Research Fellow at the Upjohn Company in Kalamazoo (Michigan, USA, 1983), the Royal Free Hospital (London, UK, 1984), the King's College Hospital (London, UK, 1984-1986), and the Wellcome Research Laboratories (Beckenham, UK, 1986). Professor Francisco Guarner was previously a researcher at the Digestive System Research Unit of the Vall d'Hebron Research Institute and assistant professor at the Autonomous University of Barcelona.

He is member of the Steering Committee of the International Human Microbiome Consortium (IHMC), member of the Scientific Committee of the Gut Microbiota for Health Section of the European Society of Neurogastroenterology and Motility (ESNM), and member of the 'Guidelines & Publications Committee' of the World Gastroenterology Organization (WGO). Past member of the Board of the International Scientific Association for Probiotics and Prebiotics (ISAPP). Current President of Sociedad Ibero-Americana de Microbiota, Probióticos y Prebióticos (SIAMPYP).

Co-author of 341 publications (329 indexed in Web of Science) in the field of mucosal immunity, gastrointestinal inflammation and gut microbiota; holds an H-index of 68.

<https://www.webofscience.com/wos/author/record/ABF-1192-2020>

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ABSTRACT

Gut microbiota: tales from the past and a look to the future

Millions of microorganisms have been living in symbiosis with animals and plants since multicellular life evolved about a billion years ago. The host provides habitat and nutrition and derives multiple benefits from their microbial guests in a mutualistic relationship. The human gut microbiota is an organ of the gastrointestinal tract that provides a 'metagenome': additional genes and functions to the genetic resources of the species, which participate in multiple physiological processes. The microbial colonizers of the human intestine contribute to metabolic (energy and nutrient recovery), protective (barrier effect against invaders) and trophic (immune regulation, neuro-endocrine development) functions.

Some chronic non-communicable diseases of developed society (atopy, metabolic syndrome, inflammatory and autoimmune diseases, cancer, autism and other behavioural disorders) are associated with dysbiosis: loss of species richness in the gut microbiota and deviation from the ancestral microbial environment. The massive use of antibiotics and the dietary habits of industrialized society seem to be at the origin of dysbiosis.

Disorders of the Gut-Brain Interaction are characterized by recurrent gastrointestinal symptoms (abdominal discomfort or pain, bloating, postprandial distention, alterations in bowel habits), without any detectable structural disease. However, low-grade inflammation of the mucosa and changes in the composition of the microbiome have been consistently recognized.

Diet influences composition and functions of the microbiome. Plant-based foods improve the diversity and functional quality of the microbiome. Tolerance of plant foods depends on the ability of the microbiome to process them. Plant-food exclusion diets, such as the low-FODMAP diet, have been recommended with the aim of avoiding digestive symptoms. However, some studies indicate that plant-food exclusion diets may worsen the functional capacity of the microbiome and consequently, worsen long-term tolerance.



SIMONE GUGLIELMETTI

Full Professor in Food Microbiology, Milan University - Italy

BIOSKETCH

Simone Guglielmetti is Full Professor of Food Microbiology at the Department of Biotechnology and Biosciences, University of Milano-Bicocca, Italy. He graduated cum laude in Food Science and Technology from the University of Milan and obtained a PhD in Food Biotechnology. His research focuses on applied microbiology and microbial biotechnology, with particular emphasis on probiotic bacteria, intestinal microbiota and host-microorganism interactions. He has extensively studied bifidobacteria and lactic acid bacteria, addressing their adhesion properties, immunomodulatory activities, persistence in the human gut, and potential use in functional foods and probiotic interventions. His work also includes microbiome-based studies evaluating the impact of diet and probiotics on gut microbial ecology, immune modulation and gastrointestinal physiology. Overall, his scientific activity combines basic and translational approaches to understand how selected microorganisms and diet-associated microbial exposures may influence host physiology and human health.

ABSTRACT

Probiotics: from history to future

(From “one-size-fits-all” probiotics to patient-stratified microbial interventions in IBS)

The idea that intestinal microorganisms can influence host physiology has historical roots, but its relevance in irritable bowel syndrome (IBS) requires a modern, mechanism-based interpretation. IBS is a heterogeneous disorder in which altered motility, visceral hypersensitivity, epithelial and vascular barrier dysfunction, mucosal immune activation, diet-related triggers and microbial metabolic activity may contribute differently across patients.

Clinical studies and meta-analyses suggest that selected probiotic strains may improve global IBS symptoms or specific symptom domains. However, interpretation remains limited by major heterogeneity in strains, formulations, doses, endpoints and patient populations. Therefore, the central question is not whether “probiotics” work as a broad category, but which microbial intervention may benefit which patient, through which mechanism, and in which intestinal microenvironment.

This lecture will discuss probiotics as tools for targeted modulation of the intestinal microenvironment in IBS, emphasizing strain specificity and patient stratification. Microbiota-based predictors of response will be considered, including *Collinsella aerofaciens* as a potential marker of response to *Lactocaseibacillus paracasei* DG in non-constipated IBS. The presentation will then move beyond taxonomy to microbial functions and metabolites. Recent mechanistic studies indicate that fermentative short-chain fatty acid profiles, histamine-producing bacteria, altered bile acid metabolism, microbial gases, mucosal biofilms, and β -glucuronidase-dependent regulation of luminal proteases may affect mast-cell activation, visceral pain, motility, barrier function and symptom generation.

Finally, the lecture will consider the transition from empirical probiotic use to rationally selected probiotics and next-generation live biotherapeutic products, aimed at matching specific microbial functions to selected IBS patient subgroups.



GIANLUCA IANIRO

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BIOSKETCH

Gianluca Ianiro received his medical degree in 2009 summa cum laude at the Catholic University of Rome. He trained in gastroenterology at the same University. He is currently gastroenterologist at the Digestive Disease Center of the Fondazione A. Gemelli IRCCS and adjunct professor in gastroenterology at the Università Cattolica del Sacro Cuore in Rome, Italy.

He has since gone on to establish himself as a key clinical and translational investigator focusing mainly in the field of intestinal microbiota, and has received several research grants in support of his innovative research. His current research is focused mainly on microbiome diagnostics, on disentangling the rules of donor microbiome engraftment, and on investigating microbiome therapeutics.

ABSTRACT

Predictors of response to gut microbiota modulation

Gut microbiota modulation has emerged as a promising therapeutic approach in several clinical settings, including inflammatory bowel disease, recurrent *Clostridioides difficile* infection, metabolic disorders, and cancer. Despite growing evidence supporting microbiome-targeted interventions, treatment efficacy remains highly variable among individuals, highlighting the need to identify factors that determine responsiveness.

Response to microbiota modulation is influenced by a complex interplay between microbial, host, and environmental determinants. Among these, baseline microbiota composition and functional capacity have consistently emerged as key predictors of therapeutic outcomes. Higher microbial diversity, the presence of beneficial commensal taxa, and specific metabolic signatures are frequently associated with improved responses to dietary interventions, probiotics, and fecal microbiota transplantation. In parallel, host-related factors—including immune status, disease phenotype, metabolic profile, medication exposure, and dietary habits—contribute substantially to interindividual variability.

Recent advances in metagenomics, metabolomics, and other multi-omics approaches have provided deeper insights into the mechanisms underlying treatment response and have enabled the identification of candidate predictive biomarkers. The integration of microbial and host-derived data is fostering the development of predictive models capable of stratifying patients and guiding personalized therapeutic strategies.

A better understanding of response predictors is essential to move from empirical microbiota modulation toward precision microbiome medicine, maximizing efficacy and improving clinical outcomes across diverse disease settings.



ANTHONY LEMBO

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BIOSKETCH

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ABSTRACT

IBS in Rome V Criteria: What's New?

The Rome V criteria for disorders of gut-brain interaction (DGBI) represent the first major update to the Rome framework in a decade and incorporate advances in symptom science, epidemiology, and clinical practice. For irritable bowel syndrome (IBS), Rome V introduces several important changes designed to improve both clinical utility and research applicability. Most notably, abdominal discomfort has been reintroduced alongside abdominal pain in the clinical diagnostic criteria, recognizing that many patients experience bothersome abdominal symptoms that do not meet a strict definition of pain. Rome V also distinguishes between clinical and research criteria, allowing greater flexibility in patient care while maintaining standardized definitions for clinical trials. Additional updates include refinements in symptom thresholds, greater emphasis on symptom burden and functional impairment, and a more patient-centered approach to diagnosis. This presentation will review the rationale for these changes, summarize the updated Rome V IBS criteria, and discuss their implications for clinical practice, epidemiologic studies, and therapeutic trials.



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BIOSKETCH

Giovanni Marasco graduated summa cum laude in Medicine and Surgery at the University of Bologna, where he subsequently completed a Ph.D. in Medical Sciences and a specialization in Gastroenterology with highest honors. He obtained the Italian National Scientific Qualification for Full Professorship in both Internal Medicine and Gastroenterology.

Dr. Marasco's clinical and research activities focus on disorders of gut-brain interaction, neurogastroenterology, gut microbiota, fecal microbiota transplantation, digestive endoscopy, and translational gastroenterology. His research spans the pathophysiology and treatment of irritable bowel syndrome, post-infectious gastrointestinal disorders, microbiota modulation, and the role of the microbiome in gastrointestinal and systemic diseases. He has authored more than 200 peer-reviewed publications in leading international journals, including Gut, Gastroenterology, American Journal of Gastroenterology, Lancet Gastroenterology & Hepatology, Lancet Oncology, and Neurogastroenterology & Motility.

Dr. Marasco is actively involved in undergraduate, postgraduate, and doctoral medical education at the University of Bologna and serves on the faculty boards of several residency and degree programs. He has received numerous national and international awards, including the United European Gastroenterology (UEG) National Scholar Award and the Emilia-Romagna Award for Scientific Research Excellence.

He currently serves as Associate Editor for Digestive Diseases, Trainee Editor for the United European Gastroenterology Journal, and Editorial Board Member of several international journals in gastroenterology and hepatology. He is actively engaged in national and international scientific societies and collaborative research networks dedicated to neurogastroenterology, gut microbiota, and digestive disease.

ABSTRACT

The Potential of Multi-Target Plant-Based Therapies for Visceral Pain and Dysbiosis in Patients with Disorders of Gut-Brain Interaction

Disorders of Gut-Brain Interaction (DGBI), including functional dyspepsia and irritable bowel syndrome (IBS), are highly prevalent conditions characterized by complex and multifactorial pathophysiological mechanisms. Altered gut motility, visceral hypersensitivity, low-grade immune activation, epithelial barrier dysfunction, and gut microbiota alterations all contribute to symptom generation and persistence. Given this complexity, single-target pharmacological approaches often provide incomplete symptom relief.

Plant-based therapies represent an attractive therapeutic strategy because of their ability to simultaneously target multiple pathogenic pathways. Herbal compounds such as peppermint oil and caraway oil have demonstrated antispasmodic, anti-inflammatory, antimicrobial, and neuromodulatory properties. Experimental evidence suggests that these agents may reduce visceral hypersensitivity, modulate gut microbiota composition, enhance short-chain fatty acid production, and improve gastrointestinal motility. Clinical studies have shown beneficial effects on abdominal pain, bloating, fullness, and global symptom burden in patients with functional dyspepsia and IBS.

By addressing both visceral pain and dysbiosis, multi-target plant-based therapies may offer a holistic and personalized approach to DGBI management. Future research should further elucidate their mechanisms of action and define their role within integrated treatment strategies aimed at restoring gut-brain-microbiota homeostasis.

Post-infection DGBI: Results from the Rome Foundation Global Epidemiology Study

Acute infectious gastroenteritis is one of the strongest known triggers for the development of disorders of gut-brain interaction (DGBI). However, the global burden and clinical profile of post-infection DGBI (PI-DGBI) have remained poorly characterized. Using data from the Rome Foundation Global Epidemiology Study, involving more than 54,000 individuals from 26 countries, we investigated the prevalence, geographical distribution, and associated factors of PI-DGBI.

Among subjects with DGBI who answered specific questions regarding previous gastrointestinal infections, 10.5% fulfilled criteria for PI-DGBI. Prevalence varied considerably across regions, with the highest rates observed in Asia and Latin America. Individuals with PI-DGBI were more likely to be younger, live in urban settings, report anxiety and somatic symptoms, and experience a greater impairment in physical and psychological quality of life.

Clinically, PI-DGBI was associated with a distinctive phenotype characterized by increased rates of functional dyspepsia, irritable bowel syndrome, esophageal disorders, and anorectal disorders. More than one-third of affected individuals reported overlapping DGBI, emphasizing the widespread impact of post-infectious mechanisms throughout the gastrointestinal tract.

These findings establish PI-DGBI as a significant global subgroup of DGBI and reinforce the concept that acute gastrointestinal infections can lead to long-lasting alterations in gut-brain communication. Improved recognition of PI-DGBI may facilitate earlier diagnosis, targeted management strategies, and preventive interventions aimed at reducing the long-term consequences of infectious gastroenteritis.



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BIOSKETCH

Hanne Matheussen is a PhD-candidate in neurogastroenterology at the translational research unit for gastrointestinal disorders, KU Leuven. She studies normal gastrointestinal physiology as to better understand motility disorders. Additionally, she is a third-year internal medicine resident at the university hospitals UZ Leuven.

ABSTRACT

Challenges in IBS management: Clinical case 2

A 28 year old male reports a three year history of abdominal cramping, frequent loose stools, bloating, and excessive flatulence. The stool frequency is bothersome to the point of keeping him from showing up at work.

Symptoms started in the aftermath of a gastrointestinal infection, presenting with bloating and fullness in the absence of diarrhea. The infection was treated with azithromycin after which abdominal symptoms would soon relapse. Immediate symptom relief has since only been achieved with intermittent courses of paromomycin, supporting his idea of small intestinal bacterial overgrowth (SIBO).

Extensive work-up, including bloodwork, endoscopy, imaging and breath testing remained unrevealing. A dietician supervised low-FODMAP diet as well as spasmolytics would bring some limited relief, and the restrictive diet had become increasingly burdensome.

At referral at our tertiary neurogastroenterology clinic FODMAP reintroduction was supervised by our dietician. As over time pain would become more pronounced, neuromodulators (TCA) were transiently introduced with variable efficacy.

Irrespective, bloating and frequent stools remained highly bothersome, infringing on the patient's social and professional life. Rapid relief was still only provided by antibiotics. To interrupt this cycle, alternative treatment options were explored with a reasonable response to the anti-H1receptor agonist ebastine and a low dose of ondansetron and liraglutide. In terms of his frequent self diagnosed nutritional deficiencies and experimental restrictive dietary regimens, structured guidance was continuously emphasized throughout.

This case illustrates the diagnostic and therapeutic challenges posed by rapid, transient antibiotic responses in a broader context of best symptom relief in complex tertiary neurogastroenterology patients.



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David graduated in Medicine and Surgery at the University of Bologna (Alma Mater Studiorum) with highest honors (110/110 cum laude) in 2024. He is currently a Gastroenterology Resident at the IRCCS Policlinico di Sant'Orsola, University of Bologna, Italy. His research interests focus on disorders of gut-brain interaction, post-infectious gastrointestinal disorders, irritable bowel syndrome and the gut microbiota. He is involved in several clinical and translational research projects, including studies on post-infectious irritable bowel syndrome, symptomatic uncomplicated diverticular disease, microbiota transplantation, and eosinophilic esophagitis. He has co-authored peer-reviewed publications in the fields of neurogastroenterology and microbiota-related disorders.

He received the Best Free Paper Award at IBS Days 2024 for the study "Disorders of Gut-Brain Interaction Following Salmonella Gastroenteritis: A 30-Year Longitudinal Prospective Study" and has been awarded several merit-based scholarships throughout his academic career.

ABSTRACT

Challenges in IBS management: Clinical case 1

Irritable bowel syndrome (IBS) is a multifactorial disorder of gut-brain interaction (DGBI) characterized by altered gastrointestinal motility, visceral hypersensitivity, increased intestinal permeability, gut microbiota dysbiosis, and abnormal gut-brain signaling. IBS is a highly prevalent condition, affecting approximately 4–5% of the general population, with a higher prevalence among women. Furthermore, several of the pathophysiological mechanisms involved in IBS are shared with other gastrointestinal disorders, which may coexist with IBS or contribute to the development of overlapping clinical conditions. 12–5

IBS commonly presents with persistent abdominal pain, bloating, and diarrhea, which are among the most common reasons for referral to gastroenterology clinics. These symptoms are not specific and may also occur in a variety of other conditions, including inflammatory bowel disease (IBD), gastrointestinal infections, celiac disease, and alterations of the gut microbiota. In clinical practice, distinguishing between these disorders may be challenging, particularly when symptoms persist despite treatment or when different conditions coexist.

The present case concerns a young woman referred for chronic abdominal pain, bloating, and diarrhea. Initial clinical evaluation and laboratory investigations did not allow a definitive diagnosis, leading to further assessment with endoscopic and imaging studies. Following an initial improvement in both symptoms and laboratory parameters, the patient experienced a recurrence of gastrointestinal complaints, requiring a new diagnostic work-up and a re-evaluation of previous findings. The case illustrates the difficulties encountered in the assessment of persistent gastrointestinal symptoms and the need for repeated diagnostic reassessment when the clinical course is not consistent with the initial working diagnosis. The integration of clinical history, biomarkers, endoscopic findings, imaging, and histology was essential to guide the diagnostic process and therapeutic decisions.

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CHLOÉ MELCHIOR

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Chloé Melchior is assistant professor in Gastroenterology at the Department of Gastroenterology, Rouen University Hospital and deputy director of the research lab INSERM ADEN UMR1073, Nutrition, Inflammation and microbiota-gut-brain axis, at Rouen Normandie University, France. Her research topic is on the impact of diet on irritable bowel syndrome. Recently, she has been interested in the link between DGBI, disordered eating and eating disorders. Therefore she will provide a talk at IBS days 2026 on the impact of ARFID on IBS management.

During her training, she spent 6 months fellowship at KU Leuven, Belgium (PI: Jan Tack) and 2 years as a postdoc at the University of Gothenburg, Sweden (PI: Magnus Simrén). Currently she is a member of the ESNM (European Society of Neurogastroenterology and Motility) steering committee, but also of the French society of Neurogastroenterology (GFNG) and the French Society of Gastroenterology (SNFGE). She is co-chair with Kristin Elfers of the nEUROgastro TANDEM meeting since 2023. Since 2024 she is chair of the UEG Research Committee and in the UEG council.

ABSTRACT

Avoidant/Restrictive Food Intake Disorder (ARFID)

Avoidant/Restrictive Food Intake Disorder (ARFID) is increasingly recognized in patients with Disorders of Gut-Brain Interaction (DGBI), particularly in Irritable Bowel Syndrome (IBS), where restrictive eating behaviours may emerge from attempts to control gastrointestinal symptoms. While dietary interventions are a cornerstone of IBS management, including low-FODMAP and exclusion diets, these strategies may unintentionally reinforce maladaptive food avoidance and contribute to nutritional, psychological, and social impairment in vulnerable individuals.

This presentation will focus on the practical implications of ARFID in IBS management. It will discuss how clinicians can differentiate appropriate dietary adaptation from pathological food avoidance and identify red flags suggestive of ARFID in routine gastroenterology practice. Particular attention will be given to patients with severe symptom-related anxiety, nutritional deficiencies, weight loss, marked social impairment, or highly restrictive diets.

The talk will review strategies to minimize the risk of disordered eating during dietary treatment of IBS, especially when prescribing low-FODMAP or elimination diets. Emphasis will be placed on the importance of multidisciplinary care involving gastroenterologists, GI dietitians, psychologists, and mental health professionals. Practical approaches to support food reintroduction, improve nutritional adequacy, reduce food-related fear, and maintain quality of life will also be addressed.

Recognizing ARFID in IBS is essential to ensure that dietary management improves symptoms without causing nutritional, psychological, or social harm.



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BIOSKETCH

Sanna Nybacka is a researcher at the University of Gothenburg, Sweden. Her research focuses on dietary treatment in disorders of gut-brain interaction, particularly irritable bowel syndrome, with an emphasis on patient responses to dietary interventions, food-related symptom expectations, and mechanisms underlying symptom generation. She has contributed to several clinical studies on IBS, including randomized trials evaluating dietary treatment strategies. Her work aims to improve personalized and evidence-based nutritional care for patients with IBS.

ABSTRACT

Advancing Low-FODMAP Diets to the Next Level

The low-FODMAP diet is one of the most effective dietary therapies for IBS, with consistent evidence demonstrating symptom improvement in a substantial proportion of patients. At the same time, clinical experience and emerging research highlight important limitations related to complexity, adherence, nutritional adequacy, and the need to individualize treatment beyond a “one-size-fits-all” approach.

This lecture will discuss how low-FODMAP therapy is evolving in clinical practice and research. Key topics include strategies to optimize patient selection, improve implementation and long-term adherence, and tailor restriction and reintroduction based on symptom patterns, patient preferences, and treatment goals. The lecture will also address recent developments including simplified and less restrictive approaches, and the growing role of personalized nutrition in IBS management



MARIA RESCIGNO

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Maria Rescigno (H-index 77) is Scientific Director Research Center for Molecular Medicine (CeMM) Vienna, AT and Full Professor General Pathology Humanitas University, Milan, IT. She graduated in Biology in the University of Milan and received her PhD in Pharmacology and toxicology.

She was the first to show that dendritic cells actively participate to bacterial uptake in the gut and the existence of a gut vascular barrier that resembles the blood brain barrier. She authored more than 220 publications in high impact journals, including Science, Nature Immunol, Immunity, J. Exp Med., Science TM.

She has been the recipient of three ERC grants (starting, proof-of-concept and consolidator). She seats in the technical and scientific board of several charities, funding agencies and in different companies.

She received several awards ("Premio Roma per lo sviluppo del Paese", 2022 and the prestigious Pezcoller-Marina Larcher Fogazzaro-EACR Women in Cancer Research Award, 2023), including an honourable mention from Belgian Embassy, 2022.

In 2016 Maria Rescigno founded Postbiotica s.r.l. a spin-off of the University of Milan that exploits microbiota-derived metabolites as new pharmaceutical agents.

ABSTRACT

Intestinal vascular and blood brain barriers in health and disease

The human gut contains trillions of microbial cells and more than 1,000 microbial species, which support key gastrointestinal functions such as nutrition, mucosal immunity and defence against pathogens. The gastrointestinal mucosa is the main interface between the gut lumen and the internal environment, and it represents the body's largest site of interaction with the microbial world.

The gut barrier must allow the exchange of nutrients and metabolites with the microbiota while protecting the body from harmful microbial invasion. It is composed of three main elements: the mucus layer, the epithelial monolayer and the lamina propria, which contains mucosal immune cells. These layers work together to maintain barrier function. The epithelial monolayer is dynamic, and its tight junctions, which seal the spaces between epithelial cells, are regulated by gut microbes and diet.

Below the mucosal barrier, the gut vascular barrier controls passage into systemic circulation and helps prevent bacterial translocation to distant sites with effects in the central nervous system. When microbiota composition is altered by inflammation, poor diet or antibiotics, mucosal permeability can increase. As a result, microbial components may enter circulation and reach organs such as the liver and brain, promoting systemic inflammation. Beneficial microbes control the permeability of the gut barrier and will be discussed in the presentation.



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BIOSKETCH

Karen Routhiaux is a Belgian dietitian and biomedical scientist affiliated with the Translational Research in Gastrointestinal Disorders (TARGID) group at KU Leuven, where she is currently pursuing a PhD. Her research and clinical interests focus on disorders of gut-brain interaction (DGBI), including irritable bowel syndrome and functional dyspepsia, with particular attention to food-related symptom triggers, dietary interventions such as the low FODMAP diet, and disturbed eating behaviors—especially avoidant/restrictive food intake disorder (ARFID) in the context of DGBI.

ABSTRACT

Eosinophil activation and IBS

IBS is defined by recurrent abdominal pain associated with altered stool frequency, and/or stool consistency. Although the pathophysiology of IBS is multifactorial and incompletely understood, low-grade mucosal immune activation and neuroimmune interactions are increasingly recognized as important contributors to symptom generation. While mast cells have been extensively studied in IBS, the role of eosinophils is less established. Eosinophils are innate immune granulocytes involved in Th2-mediated immune responses. Upon activation, eosinophils release cytokines, chemokines, lipid mediators, neuromodulators and cytotoxic proteins, including eosinophil peroxidase, major basic protein, eosinophil cationic protein (ECP), and eosinophil-derived neurotoxin (EDN). Faecal levels of EDN (F-EDN) have been shown to be useful in evaluating disease activity and predicting relapse in patients with IBD and collagenous colitis. Recent studies have shown that specific foods can trigger immune mediated responses in the gastrointestinal tract, where both mast cells and eosinophils play a role. Increased numbers of degranulated eosinophils in the colonic mucosa and elevated ECP levels have been observed following food exposure, correlating with higher F-EDN levels in IBS patients compared with controls. Furthermore, genetic variation in the eosinophil trafficking receptor CCR3 has been associated with response to a FODMAP-lowering diet, supporting a role for eosinophil-related pathways in dietary responsiveness. More recently, we identified elevated baseline F-EDN levels in a subset of primary care IBS patients, which were associated with greater symptom improvement following dietary treatment. We also found differences in baseline F-EDN levels across IBS subtypes, patients with IBS-C exhibited lower baseline F-EDN compared to IBS-M and IBS-D.



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Dr. Javier Santos is Head of Clinical Gastroenterology and Pancreas at the Hospital Vall d'Hebron, Barcelona, Director of the Consolidated Group of Digestive Research in Catalonia (2021-00766 SGR-AGAUR), Group Leader (CB06/04/0021) within the Spanish Network of Gastrointestinal and Hepatic Diseases, and proposed Director of the Group of Physiology and Pathophysiology of Digestive Diseases at the Vall d'Hebron Research Institute (VHIR). Dr. Santos graduated in Medicine and Surgery from the University of Navarra (Spain) in 1988. He then completed his training in Gastroenterology and Hepatology (1989-1993) at the Hospital Universitari Vall d'Hebron, Barcelona, Spain. In parallel, he achieved a predoctoral degree in basic and clinical research in neuro-gastroenterology at the Digestive Diseases Research Unit, Dpt. of Gastroenterology, Hospital Vall d'Hebron (1993-1997) and obtained his Ph.D. at the Autonomous University of Barcelona, Spain (1997), under the tutorship of Dr. Esteban Saperas, he started a 3-year postdoctoral period (1997-1999) in Immunology and Gastrointestinal Physiology at the Intestinal Disease Research Program, McMaster University, Canada, under the supervision of Dr. Mary H. Perdue, where he received the CAG/ASTRA Fellowship for Meritorious Research, returning to the Hospital Vall d'Hebron in 2000. He then carried out three short (2-6 months) post-doctoral training stays in centers of international prestige such as the Nestle Research Center, Lausanne (2001), the Faircomb Institute, Faculty of Health Sciences, Hamilton, Canada (2011), and the Alimentary Pharmabiotic Centre, Bioscience Institute, University College Cork, Cork, Ireland (2012). In 2016, he became a Rome Foundation Fellow (R.F.F.). Dr. Santos has been honored by the Association of European and Mediterranean National Societies of Gastroenterology as Rising Star of Gastroenterology 2003, and more recently by the International Foundation for Functional Gastrointestinal Disorders (IFFGD) with the 2009 Research Award for the best Researcher in Clinical Sciences for his contributions in the field of Functional Gastrointestinal Disorders.

His clinical practice develops mainly in the hospital outpatient setting, integrated in a large referral unit, and focuses specifically, but not only, on disorders of brain-gut interaction, food allergies and intolerances, eosinophilic disorders, reflux disease and chronic diarrheal processes. Dr. Santos is the author of more than one hundred peer-reviewed publications and numerous national and international lectures in the field of functional gastrointestinal disorders and microbiota. He has contributed to the development of clinical guidelines in the field of gastroenterology and to the organization of national and international training courses on aspects related to functional disorders of the digestive system. He also develops various academic and scientific activities, including the supervision of gastroenterology fellows during their residency, the direction and mentoring of dozens of pre- and post-doctoral research fellows, and has acted as a member of national and international dissertation and steering committees. He is a member of several international professional and scientific societies, including the European Society of Neurogastroenterology and Motility, the International Foundation for Functional Gastrointestinal Disorders, the American Gastroenterological Association, and the European Gastroenterological Federation. He also serves as an external reviewer for regional, national and supranational public and private funding agencies and academic institutions, as well as for a very large number of scientific journals, including several editorial boards.

He has created and leaded the Neuro-Immuno-Gastroenterology Research Laboratory at the Hospital Vall d'Hebron for twenty years. His research in the field remains inherently translational, with special emphasis on the mechanisms linking genetic, molecular, microbial, cellular and environmental determinants to the clinical manifestations of functional gastrointestinal disorders. His research also aims at the identification of sensitive and specific molecular and microbial biomarkers potentially useful for the diagnostic and therapeutic management of these common disorders. Dr. Santos has a solid research background, with more than 30 years dedicated to these tasks. He has enjoyed continuous funding from the Fondo de Investigación Sanitaria since 1999, when he was awarded the first generation Miguel Servet contract. Since then he has directed numerous competitive and non-competitive projects, including clinical trials of different categories. Dr. Santos has been a member of the Spanish Network of Hepatic and Digestive Diseases (CIBERehd) since 2009 and has participated in several European research initiatives, such as the European Training Network in Neural Regulation of Intestinal Function (NeuroGut, <https://cordis.europa.eu/project/id/607652/reporting/es>), two COST Actions (BM1007, Mast Cells and Basophils Targets for Innovative Therapies; BM1106, GENIEUR, The Genes in Irritable Bowel Syndrome Research Network Europe), and has recently obtained a large European project as main coordinator, for the study of the origin of comorbidities in IBS, www.discoverie.eu). He is also a member of the Rome Foundation (<https://theromefoundation.org/>) and keeps international ongoing collaborations in the field and also with transversal groups in other areas of medicine.

ABSTRACT

Translational highlights from the H2020 DISCOvERIE study

The H2020 DISCOvERIE project (“Development, diagnosis and prevention of gender-related Somatic and mental COMorbiditiEs in IRritable Bowel Syndrome In Europe”) delivered an integrated translational framework to better understand irritable bowel syndrome (IBS) and its psychiatric and somatic comorbidities by combining clinical phenotyping, multi-omics, neuroimaging, microbiome science, and experimental models.

A major translational achievement was the identification of biological signatures associated with IBS severity and comorbidity burden. Intestinal permeability studies demonstrated altered small bowel barrier function in IBS patients with mental and multicomorbid phenotypes, while transcriptomic and proteomic analyses of colonic biopsies identified candidate molecular biomarkers with potential diagnostic utility. Neuro-immune studies further revealed increased mast cell-nerve proximity, supporting a mechanistic link between mucosal immune activation and visceral hypersensitivity.

At the gut-brain axis level, stress paradigms combined with functional MRI demonstrated enhanced emotional and stress responsiveness in IBS patients, whereas fecal microbiota transplantation experiments transferred visceral hypersensitivity and depressive-like behaviors to animal models, supporting a causal role of the microbiota in gut-to-brain signaling. Microbiome and metabolomic analyses identified reduced butyrate-producing bacteria, altered neurotransmitter-related pathways, and signatures associated with oxidative stress and systemic inflammation.

The project also generated clinically relevant translational outputs, including 38 novel IBS-associated genetic loci, digital phenotyping tools for longitudinal symptom monitoring, and evidence supporting systematic screening for psychiatric and somatic comorbidities. Collectively, DISCOvERIE advances precision medicine approaches in IBS and provides a foundation for future biomarker-driven diagnostics and personalized therapeutic strategies.



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Giovanni Sarnelli is Professor of Gastroenterology at the University of Naples Federico II, where he combines clinical practice, teaching, and research in the field of digestive diseases. His main interests include disorders of gut-brain interaction, particularly functional dyspepsia, irritable bowel syndrome, esophageal disorders, and the role of the gut microbiome in health and disease. He also has a longstanding interest in the role of nutrition and dietary interventions in the management of gastrointestinal disorders.

His research has focused on unraveling the mechanisms underlying gastrointestinal symptoms and translating scientific discoveries into innovative therapeutic approaches. In particular, he has pioneered the development of engineered probiotics capable of producing bioactive molecules directly within the gut, leading to several international patents and the creation of a university spin-off dedicated to microbiome-based therapeutics. This work reflects his broader interest in precision medicine and the development of next-generation treatments for digestive disorders.

Prof. Sarnelli served as Co-Chair, together with Prof. Michael Camilleri, of the Rome V chapter on Pharmacology, Pharmacokinetics, and Pharmacogenomics Applied to Disorders of Gut-Brain Interaction. He is actively involved in several national and international scientific societies and guideline committees and is the author of more than 180 peer-reviewed scientific articles and several book chapters in the field of gastroenterology.

ABSTRACT

Escherichia Coli Nissle 1917: a century-old probiotic driving modern innovations in gut inflammation control

More than a century after its discovery by Alfred Nissle in 1917, *Escherichia coli* Nissle 1917 (EcN) remains one of the most extensively characterized and clinically validated probiotic bacterial strains. Originally isolated from a healthy soldier resistant to infectious diarrhea, EcN has evolved from a traditional probiotic into a model live biotherapeutic microorganism, bridging classical microbiology with modern microbiome-based medicine. Its therapeutic effects are supported by multiple mechanisms, including enhancement of intestinal barrier integrity, modulation of innate and adaptive immune responses, suppression of enteric pathogens through microcin production and nutrient competition, and promotion of microbial eubiosis.

Growing evidence indicates that EcN can attenuate intestinal inflammation by regulating cytokine networks, strengthening tight junctions, reducing intestinal permeability, and influencing host cellular signaling through outer membrane vesicles and microRNA-mediated pathways. Clinical studies have demonstrated benefits in disorders characterized by gut inflammation and dysbiosis, including ulcerative colitis, post-infectious gastrointestinal disorders, and irritable bowel syndrome. Furthermore, EcN has shown efficacy comparable to mesalazine in maintaining remission in ulcerative colitis, supporting its role as a clinically relevant microbiome-based intervention. Beyond its intrinsic probiotic properties, EcN has emerged as a highly attractive chassis for microbial engineering. Its well-characterized genome, favorable safety profile, and ability to persist at mucosal surfaces have enabled the development of engineered EcN strains capable of delivering recombinant antigens, therapeutic proteins, anti-inflammatory molecules, and biosensors directly within the gastrointestinal tract. Recent studies have demonstrated the feasibility of engineered EcN platforms to induce robust mucosal and systemic immune responses, highlighting their potential for targeted therapeutic delivery. The convergence of a century-long safety record with advances in synthetic biology positions EcN as a unique programmable live biotherapeutic platform for next-generation strategies aimed at controlling gut inflammation and restoring intestinal homeostasis.



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BIOSKETCH

Prof. Edoardo Vincenzo Savarino received his Medical and Ph.D. degrees from the University of Genoa, Genoa, Italy. He completed his residency training in internal medicine and gastroenterology at the Department of Internal Medicine, Azienda Ospedaliera-Universitaria San Martino of Genoa, Genoa, Italy. Presently, he is Associate Professor of Gastroenterology at University of Padua, Padua, Italy. He is mainly interested in neurogastroenterology and immune-mediated diseases, including inflammatory bowel diseases and eosinophilic disorders of the gastro-intestinal tract. He has published extensively (h-index 81, published papers n=794) on these topics and received various prizes for his work from UEG Federation, OESO foundation, ISDE, Società Italiana di Gastroenterologia ed Endoscopia. He is Reviewer for various journals, including The New England Journal of Medicine, Gastroenterology, Gut, Alimentary Pharmacology and Therapeutics, Clinical Gastroenterology and Hepatology, American Journal of Gastroenterology, and Neurogastroenterology and Motility (NMO).

ABSTRACT

Rethinking DGBI Through the Lens of Gut Permeability

Disorders of Gut-Brain Interaction (DGBI), formerly known as functional gastrointestinal disorders, have traditionally been understood through abnormalities in motility, visceral hypersensitivity, and psychosocial factors. Emerging evidence, however, suggests that altered gut permeability may represent a central and previously underappreciated mechanism linking intestinal dysfunction to systemic and neuroimmune responses. Increased intestinal permeability, often referred to as “leaky gut,” allows luminal antigens, microbial products, and inflammatory mediators to translocate across the epithelial barrier, triggering low-grade inflammation and altered gut-brain signaling. This paradigm offers new insights into the pathophysiology of common DGBI conditions such as irritable bowel syndrome and functional dyspepsia. Recent studies have demonstrated associations between impaired barrier integrity, microbiota dysbiosis, immune activation, and symptom severity, supporting a more integrative model of disease. Rethinking DGBI through the lens of gut permeability may help reconcile the heterogeneity of clinical presentations and explain the overlap between gastrointestinal, psychological, and systemic manifestations. Furthermore, it opens new therapeutic perspectives focused on restoring epithelial barrier function through dietary modulation, microbiota-targeted therapies, and anti-inflammatory strategies. This evolving framework highlights gut permeability not merely as a secondary phenomenon, but as a potential driver of gut-brain dysfunction and a promising target for future precision medicine approaches in DGBI management.



CARMELO SCARPIGNATO

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BIOSKETCH

Carmelo Scarpignato graduated in Biochemistry at the University of Messina, and in Medicine and Surgery at the University of Modena in Italy. He is currently Professor of Medicine & Clinical Pharmacology at the Faculty of Health Sciences, LUdeS Lugano Campus, Switzerland & United Campus of Malta, Msida, Malta. He is also Honorary Clinical Professor at Chinese University of Hong Kong and Consultant Clinical Pharmacologist & Gastroenterologist. He has been Visiting Professor at some prestigious European and USA Universities.

Professor Scarpignato's main research interests focus on digestive clinical pharmacology, gastrointestinal motility, and upper GI pathophysiology as well pain medicine. He has authored more than 500 publications (of which 350 are full papers or book chapters) on these topics and has also edited 28 books on clinical evaluation of GI function and on Pharmacology & Therapeutics of Digestive Diseases. He is or has been on the editorial boards of Pharmacology, Gut, Digestion, Digestive Diseases, Current Gastroenterology Reports, Alimentary Pharmacology & Therapeutics, BMC Gastroenterology, BMC Medicine, World Journal of Gastroenterology, American Journal of Pharmacology & Therapeutics, Therapeutic Advances in Drug Safety and Current Clinical Pharmacology, amongst others. He is also an Associate Editor of Inflammopharmacology, Therapeutic Advances in Gastroenterology, American Journal of Pharmacology & Toxicology, Gastrointestinal Disorders, Digestive Diseases, Digestive & Liver Diseases, and has been co-Editor of two prestigious book series, Frontiers of Gastrointestinal Research and Progress in Basic and Clinical Pharmacology.

Professor Scarpignato is a Fellow of the Royal College of Physicians (London), the American College of Physicians, the American College of Clinical Pharmacology, the American College of Gastroenterology and of the American Gastroenterological Association. In addition, he has been recognized Fellow of the European Board of Gastroenterology & Hepatology and is a European Certified Clinical Pharmacologist at EPHAR & EACPT, besides being member of several national and international scientific societies, including the New York Academy of Sciences and the EU Academy of Sciences. After 20 years of serving as Secretary General, he is currently At-large Member of the Governing Board of the World Organization for Specialized Studies on Diseases of the Oesophagus (OESO) and Past Governor for Italy of the American College of Gastroenterology (ACG). His biography has been included into the 2009-2010 Edition of Who's Who in Medicine and Healthcare.

ABSTRACT

Effective Management of IBS: Evidence-based Approach for Microbiota Modulation

Alterations in the composition and function of the gut microbiota are increasingly recognized as key contributors to the pathophysiology of irritable bowel syndrome (IBS). Compared with healthy individuals, patients with IBS often exhibit a state of dysbiosis characterized by reduced microbial diversity, depletion of beneficial commensal bacteria, and enrichment of potentially pathogenic taxa. These changes may influence gastrointestinal function through multiple mechanisms, including modulation of intestinal permeability, activation of mucosal immune responses, alteration of bile acid metabolism, and production of bioactive metabolites that affect gut motility and visceral sensitivity. Dysbiosis has also been implicated in disturbances of the bidirectional gut–brain axis, thereby contributing to symptom generation and persistence [1,2]. In addition, a subset of patients with IBS, particularly those with diarrhea-predominant symptoms, may exhibit small intestinal bacterial overgrowth (SIBO), a condition characterized by an excessive number and/or abnormal distribution of bacteria within the small intestine. SIBO may promote gas production, luminal distension, abdominal pain, bloating, and altered bowel habits through bacterial fermentation and metabolic activity [3,4]. Although the precise causal relationships remain incompletely understood, accumulating evidence suggests that both dysbiosis and SIBO may contribute to symptom development in at least a proportion of IBS patients, providing a biological rationale for microbiota-targeted therapeutic interventions, including antibiotics, probiotics, postbiotics, and fecal microbiota transplantation (FMT) [2,5].

The availability of **gut-directed antibiotics** has enabled the treatment of dysbiosis while avoiding many of the adverse consequences typically associated with systemic antimicrobial therapy. One of the most intriguing and distinctive characteristics of rifaximin is that, despite being an antibiotic, it induces only modest alterations in the overall composition of the gut microbiota. Experimental and clinical evidence indicate that rifaximin behaves as a eubiotic agent, capable of modulating microbial function and promoting a more favorable intestinal ecosystem [6,7]. In addition, it displays anti-inflammatory properties that are independent of its antimicrobial activity [8]. A meta-analysis has shown its efficacy in eradicating SIBO in patients with several clinical conditions, including IBS [8]. Its favorable safety profile and minimal systemic absorption make it an attractive microbiota-targeted therapeutic option in selected patients with IBS, in whom it induces symptom relief that is sustained after treatment discontinuation [9]. Although current guidelines, including the recent Italian guidelines [10], suggest rifaximin use in IBS patients without constipation, there is a biologically plausible rationale for its use in selected patients with IBS-C, particularly those characterized by excessive methane production and prolonged colonic transit time [11].

Probiotics represent another microbiota-directed therapeutic approach in IBS. Defined as live microorganisms that confer a health benefit when administered in adequate amounts, probiotics may improve symptoms by restoring microbial balance, enhancing intestinal barrier function, modulating mucosal immune responses, and influencing gut–brain signaling [12]. Although efficacy appears to be strain-specific and results across studies are heterogeneous, selected probiotic preparations have demonstrated beneficial effects on abdominal pain, bloating, and overall symptom burden in patients with IBS [13, 14].

Interestingly, a meta-analysis comparing probiotics with pharmacological interventions reported superior efficacy of selected probiotic preparations for global symptom relief and abdominal pain reduction [13]. An evaluation of strain-specific and outcome-specific efficacy of probiotics in IBS concluded that only four probiotics demonstrated a significant reduction in abdominal pain: *Bacillus coagulans* MTCC5260, *Lactiplantibacillus plantarum* 299v, *Saccharomyces boulardii* CNCM I-745 and *Saccharomyces cerevisiae* CNCM I-3856 [15]. International guidelines provide divergent recommendations regarding probiotics in IBS. While the British Society of Gastroenterology, the World Gastroenterology Organization, and the more recent Italian guidelines [10] consider probiotics a therapeutic option for global IBS symptoms, albeit with weak recommendations and low-quality evidence [16], the American College of Gastroenterology and the American Gastroenterological Association do not currently recommend their routine use because of insufficient and heterogeneous evidence.

Growing evidence suggests that restoration of short-chain fatty acid (SCFA) production is associated with improvement in IBS symptoms and may represent an important therapeutic target [17]. This is particularly relevant for diarrhea-predominant IBS, which is often characterized by a deficiency of SCFA-producing bacteria [18]. Among the various **postbiotic compounds**, butyric acid and its salts, particularly sodium butyrate, are the most extensively investigated owing to their beneficial effects on epithelial barrier integrity, mucosal immune regulation, intestinal inflammation, and visceral sensitivity [19]. Through these mechanisms, postbiotics may contribute to symptom improvement in IBS. A very recent meta-analysis [20] showed that postbiotic interventions significantly improve abdominal pain and overall IBS severity while maintaining a safety profile comparable to placebo. Although the therapeutic potential of postbiotics has been recognized by the International Scientific Association for Probiotics and Prebiotics (ISAPP) [21], major clinical guidelines do not currently recommend their use in the management of IBS.

Fecal microbiota transplantation (FMT) is a therapeutic strategy aimed at restoring intestinal microbial homeostasis through the transfer of a healthy donor's fecal microbiota to a recipient [22]. Originally developed for the treatment of recurrent *Clostridioides difficile* infection, FMT has subsequently been explored in several microbiota-associated disorders, including IBS. Randomized controlled trials evaluating FMT in IBS have yielded highly variable results, ranging from complete lack of efficacy to substantial and durable symptom improvement. The most recent meta-analysis [23] concluded that FMT may reduce IBS symptoms at 12 weeks compared with placebo, but the evidence remains very uncertain because of the considerable heterogeneity among studies, including differences in study design, FMT protocols, donor selection, and diagnostic criteria. Subgroup analyses reported symptom improvement when FMT was administered as a single dose and when IBS was diagnosed according to Rome IV criteria [23]. Future identification of predictors of response and standardization of donor selection, preparation procedures, and administration protocols may improve the consistency of clinical outcomes [24].

In conclusion, **microbiota-directed therapies** have a strong biological rationale in the treatment of IBS and other disorders of gut-brain interaction. These interventions act at different levels of microbiota manipulation, ranging from microbiota modulation (rifaximin) and microbiota supplementation (probiotics) to administration of microbiota-derived products (postbiotics) and complete microbiota replacement (FMT, Figure 1).

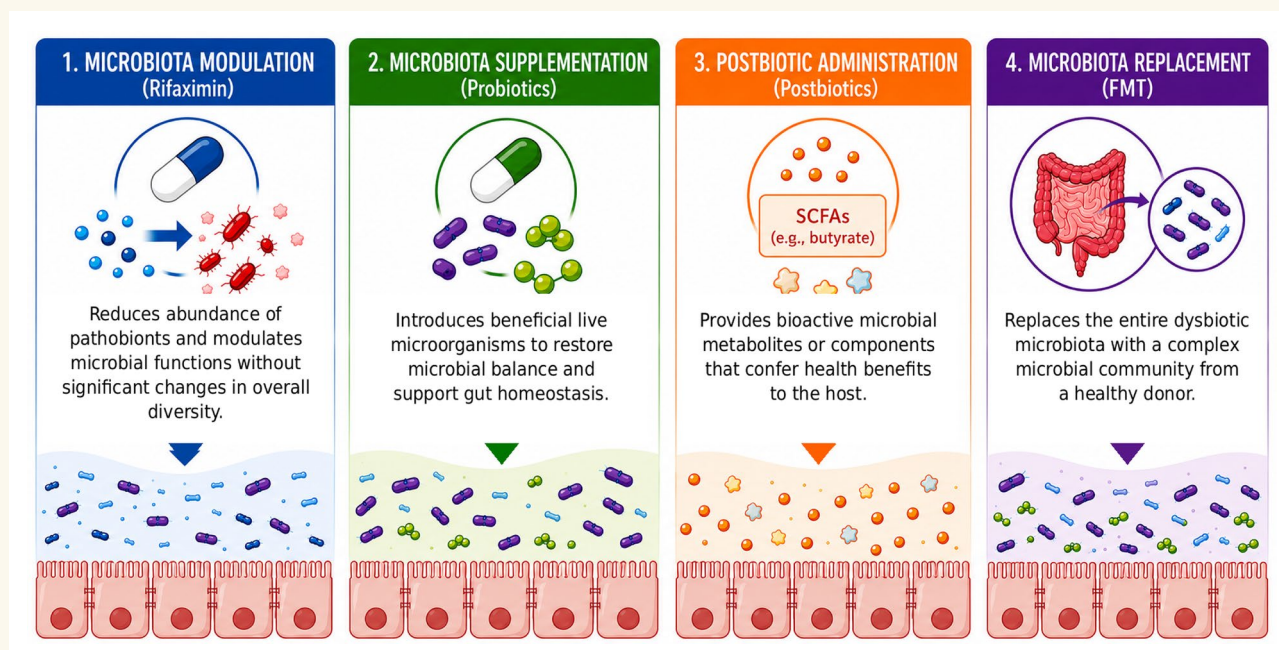


Figure 1 – Different levels of microbiota manipulation in the treatment of IBS

Among these approaches, the combined ability of rifaximin to reduce pathobionts while attenuating intestinal inflammation has made it the best-established microbiota-targeted therapy in selected patients with IBS, particularly those with SIBO [25, 26] or with putative SCFA- and bile acid-modifying taxa [27]. While the role of poorly absorbed antibiotics is well established, further well-designed studies are needed to better define the role of probiotics, postbiotics, and FMT in the therapeutic armamentarium of IBS.

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BIOSKETCH

Andrea Segrè is professor of Circular Economy and Sustainable Development Policies at the Alma Mater Studiorum-University of Bologna, where he served as Dean of the Faculty of Agriculture and Director of the Department of Agri-Food Science and Technology. He has served as President of the Edmund Mach Foundation in San Michele all'Adige and of the Bologna Agri-Food Centre.

He is the founder of Last Minute Market, an accredited spin-off of the University of Bologna and a pioneering initiative aimed at preventing the waste of food, pharmaceutical and other goods. He conceived Italy's National Food Waste Prevention Day (February 5) and launched the Zero Waste Public Communication Campaign. He is currently Scientific Director of the Waste Watcher International Observatory on Food and Sustainability and Special Advisor on urban and metropolitan food policies to the Mayor of Bologna, where he promoted the inclusion of the Right to Food in the city statutes.

Professor Segrè received numerous awards, including the Pellegrino Artusi International Prize in 2012, the San Giusto d'Oro Award in 2020, the Don Pino Puglisi International Award in 2022, and the Confcooperative Sustainability Award in 2024.

His most recent essays include: *Parole del nostro tempo* with Cardinal M. Zuppi, EDB, 2020; *Lo spreco alimentare in Italia e nel mondo* with E. Risso, Castelveccchi, 2023; *La spesa nel carrello degli altri. L'Italia e l'impoverimento alimentare* with I. Pertot, Baldini+Castoldi, 2024; and *Contro lo spreco. Cibo, valore, futuro*, Treccani, 2026.

ABSTRACT

Food Waste and the Right to Food: Two Sides of the Same Plate

Addressing food at a congress devoted to Irritable Bowel Syndrome inevitably means reflecting on what enters the stomach. This inaugural lecture, however, proposes to broaden the perspective to what happens before and after consumption: to the food that never comes to nourish because it is lost or wasted, and to the food that enters the body as the outcome of complex agricultural, economic, social, and cultural systems.

Food waste and the Right to Food are two sides of the same plate: on the one hand, excess that is squandered; on the other, needs that remain unmet. Between these two poles lie some of the major issues of our time: access to adequate food, food poverty, food quality, sustainability, consumer responsibility, public policies, and environmental and social justice.

Without entering into the medical aspects of disease, the lecture aims to show how what reaches – or fails to reach – the stomach is determined by what happens outside the body: in fields, markets, cities, households, and institutions. Understanding food therefore means connecting individual health, food systems, and the universal right to be nourished in a healthy, dignified, and sustainable way.



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BIOSKETCH

Doctor Simrén's main research areas are the pathogenesis and pathophysiology of disorders of gut-brain interaction (DGBI), as well as the treatment of these. He has published more than 400 original articles and written several book chapters on GI motility diseases and DGBI and is currently supervisor for seven PhD students and four post-docs. Doctor Simrén has served / is serving as council member for several international organizations, including UEG and the Rome Foundation. Professor Simrén has also been working as Deputy Editor and Associate Editor of Gut, and as the Clinical Editor of Neurogastroenterology and Motility. Currently, Professor Simrén is Associate Editor of Gastroenterology.

ABSTRACT

Clinical highlights from the H2020 DISCOvERIE study

In the pan-European DISCOvERIE project the overall aim was to understand similarities and differences among patients with IBS with and without comorbidities (e.g. anxiety, depression, fibromyalgia and chronic fatigue), and to demonstrate mechanisms underlying these differences and similarities. Rome IV IBS patients and disease controls (i.e. patients with comorbid conditions, but no IBS), and healthy controls were prospectively recruited at nine European centers. Upon inclusion, the subjects were thoroughly characterized, and a proportion of the subjects were assessed also at follow-up visits one and two years after inclusion. The prominent relevance of comorbid conditions for overall severity and burden was clearly demonstrated. At all visits, a pattern with more severe symptoms overall in participants with comorbid conditions was seen. Overall, the severity of symptoms, including IBS, anxiety, depression, fibromyalgia and somatic symptoms, and fatigue, demonstrated a gradual increase with increasing number of comorbidities, as well as with increasing number of psychiatric diagnoses. The longitudinal analysis underscores that symptom severity - encompassing GI symptoms, fatigue, somatic symptoms, and psychological distress - tends to be more pronounced in patients with multiple comorbidities, suggesting distinct phenotypic subgroups within the IBS population. Notably, despite some improvement in IBS severity over two years, the persistence of psychological and somatic symptom burdens indicates stable phenotypic traits that could inform personalized management strategies. In addition to links between symptom severity and patterns, and comorbid diagnoses, associations of relevance were also seen with sex, history of infections, allergy, food restriction, medication use, work absenteeism, history of trauma, and lifestyle factors.

***L. reuteri* DSM 17938 and ATCC PTA 6475 in IBS: a translational approach**

Strain specificity in probiotics is crucial since different strains from the same species can induce beneficial effects through diverse mechanisms. Clinical evidence at the strain level should be then considered before recommending probiotics.

L. reuteri strains coevolved with humans for thousands of years, developing unique molecular cross-talks with the host, but were progressively lost from human microbiome. Re-introducing them to alleviate intestinal symptoms in gut conditions appears as a valid probiotic strategy.

In this presentation we will focus on the scientific rationale for combining 2 specific strains, *L. reuteri* DSM 17938 and ATCC PTA 6475 in IBS, from the mechanistic characterization in preclinical models to the latest clinical evidence.

We will finally discuss the challenges and new discoveries beyond *L. reuteri* to promote the use of probiotics in IBS.



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Stine Störsrud is an Associate Professor, is a registered dietitian and researcher at Sahlgrenska University Hospital with expertise in Irritable Bowel Syndrome and disorders of gut-brain interaction. Her research focuses on eating behaviour, food-related gastrointestinal symptoms, and dietary management in functional gastrointestinal disorders, combining clinical nutrition with patient-centered research and clinical practice.

ABSTRACT

Dietary management

Diet plays a central role in symptom generation and symptom management in patients with Irritable Bowel Syndrome, and dietary interventions are among the most commonly used treatment strategies in clinical practice. However, dietary management of IBS is complex and requires balancing symptom relief with nutritional adequacy, quality of life, and long-term sustainability.

This lecture will provide an overview of current evidence-based dietary approaches in IBS, with particular focus on practical clinical management. Different dietary strategies, including general dietary advice, regular meal patterns, fiber modification, and the low FODMAP diet, will be discussed together with their efficacy, limitations, and suitability for different patient groups. The lecture will also address the role of eating behavior, food-related gastrointestinal symptoms, and psychosocial factors influencing symptom perception and dietary choices.

Special attention will be given to the importance of individualized and patient-centered care, emphasizing that dietary treatment should not only aim to reduce gastrointestinal symptoms but also support nutritional status, social functioning, and overall well-being. Emerging research on mechanisms underlying food-related symptoms and the potential role of personalized nutrition in IBS management will also be highlighted.

The lecture aims to provide clinicians and healthcare professionals with practical tools and clinical perspectives for implementing dietary management strategies in everyday care of patients with IBS.



JAN TACK

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BIOSKETCH

Professor Jan Tack is currently Chairman of the Gastroenterology and Hepatology Division in Leuven University Hospitals, a Professor in Internal Medicine, former Chairman of the Department of Clinical and Experimental Medicine at the University of Leuven, Belgium, a founding researcher of TARGID (the Translational Research Center for Gastrointestinal Disorders) at the University of Leuven and President of the Rome Foundation. Professor Tack's scientific interest focuses on Neurogastroenterology and Motility and Disorders of Gut-Brain Interaction.

With an h-index of 127, he has published more than 1100 peer-reviewed articles in the international literature, with over 75000 citations. Professor Tack was the promotor of more than 50 Ph.D. fellows. Professor Tack has won several awards for basic and clinical research in gastrointestinal science, including the Research Prize of United European Gastroenterology in 2015, the International Falk Foundation Gastroenterology Research prize and the UEG lifetime achievement award in 2023.

ABSTRACT

Rome Foundation related activities

The year 2026 marks the publication of Rome V, the latest update of the diagnostic criteria and management recommendations for Disorders of Gut-Brain Interaction (DGBI). This revision is grounded in robust evidence and reflects the substantial scientific progress made in our understanding of these conditions.

The Rome Foundation also plays a leading role in advancing science, particularly through the Rome Foundation Research Institute. One of the milestone scientific achievements was the creation of the Rome IV Global Epidemiology Study, a worldwide database on DGBI which generated over 50 original manuscripts in the peer-reviewed international literature. A new landmark study, the Rome V Validation global epidemiology study was meanwhile finalized. Publication of its key findings later this year will set the standard of science in our field for the coming years.

DGBI are multidimensional disorders influenced by a wide range of factors that shape symptom generation, disease expression, and therapeutic opportunities. The rapid growth and specialization in these domains is reflected in the development of dedicated Rome Foundation Sections. These include groups focused on Food and Diet, Psychogastroenterology, Anorectal Biofeedback, Pediatric DGBI, and, most recently, Complementary and Integrative Medicine. To maintain a strong presence across all continents, we have also established the Rome Foundation Partners Program, which empowers emerging leaders to spearhead educational and awareness-building initiatives at local, regional, and global levels. This expansion of activities, with expansion of skilled and committed leadership and administrative teams, will secure Rome Foundation's role and mission for the coming years.

Role of gastrointestinal motility in IBS symptom generation and as a therapeutic target

The pathophysiology of IBS is multifactorial and, while it may determine the stool pattern in IBS, the role of altered motility in symptom generation and treatment responses remains unclear. Most recently, the role of colonic motility in IBS-D with bile acid malabsorption was revealed through release of insulin-like peptide 5, triggering release of 5-HT from entero-endocrine cells and thus inducing exaggerated motility. Dietary reduction of FODMAPs has beneficial effects on symptoms, but the direct impact on colonic motility remains unknown. Using high-resolution colonic manometry (HRCM), we examined the effects of intracolonic fructose, fructan or mannitol infusion on colonic motility in healthy volunteers (HV). Fructans induced long synchronous and anterograde motor patterns, while mannitol tended to induce long retrograde patterns. Many of the long anterograde patterns were pan-colonic interrupted pressurizations, probably related to gas transit. Infusion of fructans induced numerically higher flatulence and abdominal cramp reporting. These motor responses to FODMAPs may contribute to symptom generation and dietary treatment responses in IBS. While HRCM is the gold standard for measuring colonic contractility, it is only applied in a handful of centers. Body surface colonic mapping (BSCM) allows easy-to-apply and non-invasive transcutaneous evaluation of colonic motility. In a pilot study in slow transit constipation combining HRCM and BSCM, we found strong correlations between BSCM motility indices and HRCM, for meal responses and bisacodyl-induced high amplitude propagated contractions. BSCM also identified patient-specific symptom-motility associations. In HV, BSCM recorded the colonic responses to FODMAP infusion, with a high individual correlation between BSCM and HRCM.



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BIOSKETCH

Hans Törnblom is a Consultant Gastroenterologist and Hepatologist at Sahlgrenska University Hospital in Gothenburg, Sweden, a tertiary referral center for complex intestinal problems, particularly within the field of neurogastroenterology.

His current research includes a wide area of translational and basic science studies, involving pathogenetic and pathophysiologic mechanisms in disorders of gut-brain interaction and their possible link to symptoms, particularly in irritable bowel syndrome (IBS). In his current clinical practice, chronic abdominal pain associated with DGBI refractory to standard treatment options is a special interest. He has been part of a Rome Foundation Working Team report on the use of neuromodulating pharmacotherapy in DGBI and was co-chair of the Rome V Gastroduodenal disorders.

ABSTRACT

Neuromodulators in the hands of the gastroenterologist

Disorders of gut-brain interaction (DGBI) are frequently associated with chronic gastrointestinal symptoms, abdominal pain in particular, where altered peripheral and central processing and psychosocial factors contribute substantially to symptom burden and impaired quality of life. This presentation reviews the role of neuromodulation, both pharmacologic and non-pharmacologic, in the management of DGBI, emphasizing a biopsychosocial and multidimensional clinical approach.

The presentation outlines the clinical use of gut-brain neuromodulators, including tricyclic antidepressants (TCAs), selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), and other centrally acting agents. Treatment selection is guided by symptom profile, psychosocial modifiers, comorbidities, and impact on daily functioning within the Multidimensional Clinical Profile framework.

Two clinical cases illustrate common challenges in DGBI management, including post-infection irritable bowel syndrome, anxiety-related symptom amplification, opioid-induced bowel dysfunction, and narcotic bowel syndrome. The importance of patient education, therapeutic alliance, opioid avoidance or withdrawal, and integration of psychological and behavioral therapies is emphasized.



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Dr. Tim Vanuytsel graduated in 2007 from Leuven University Medical School. He obtained a PhD degree in biomedical sciences in 2014 with a thesis on the role and mechanisms of intestinal permeability in functional gastrointestinal disorders. He is a consultant gastroenterologist in Leuven University Hospitals with a clinical focus on disorders of gut-brain interaction and patients with intestinal failure. He is the co-founder and medical lead of the Leuven Intestinal Failure and Transplantation center (LIFT). Dr. Vanuytsel is an associate professor at Leuven University. He received the UEG Rising Star Award in 2022. His research interest lies in the pathophysiology and treatment of disorders of gut-brain interaction and short bowel syndrome and he has co-authored more than 300 scientific papers.

ABSTRACT

The small intestine as a key player in symptom perception

Based on the nature and location of the symptoms, most pathophysiological research in irritable bowel syndrome (IBS) has historically focused on the colon. This has resulted in treatments that primarily target hypothesized colonic mechanisms, including spasmolytic drugs and diets altering the colonic fermentation process such as low FODMAP diet. Nevertheless, a growing body of evidence points toward a relevant role of the small intestine in symptom generation. Early studies demonstrated altered small intestinal motility and impaired gas handling. In addition, intestinal gas provoked more symptoms in IBS compared to healthy controls showing that visceral hypersensitivity is not restricted to the colon. Small intestinal bacterial overgrowth (SIBO) has long been considered a potential small intestinal trigger for IBS. However, this concept has gradually lost credibility, particularly in patients with intact anatomy and in the absence of severe enteric dysmotility. The small intestine represents the first and largest site of exposure to undigested and antigenically intact nutrients within the gastrointestinal tract. Consequently, neuroimmune interactions, which are well-described in the colon, may even be more relevant at the level of the small intestine given the higher antigenic load. Indeed, impaired barrier function and immune activation including mast cell and eosinophil activation have been repeatedly reported in the small intestine of patients with IBS. More recently, studies using confocal-laser endomicroscopy have examined the duodenal response to nutrient perfusion in IBS, suggesting that a subset of patients may develop local allergy-like reactions with signs of eosinophil activation, but independent confirmation is needed.



NATHALIE VERGNOLLE

Research Director, Director of the Digestive Health Research Institute
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BIOSKETCH

I'm a gastrointestinal pharmacologist focusing on inflammation and pain. Having trained in France, I spent half of my research career (10 years) in Canada, at the University of Calgary, before coming back to France taking a position at the National Institute of Health and Medical Research (INSERM). There, I have founded and I am the current director of the Digestive Health Research Institute in Toulouse (200 persons), France, where I also head a research team (Gut Proteases Signals) focused on the role of proteolytic balance and pathways in intestinal diseases such as Irritable Bowel Syndrome (IBS) and Inflammatory Bowel Diseases (IBD). My research work has contributed to identify the major role of protease signals in inflammation and pain mechanisms. We have identified molecular targets (proteases and protease-activated receptors: PARs) for the treatment of inflammation and pain, having been the first to identify the pro-inflammatory effects (Vergnolle et al. 1999) and the pro- nociceptive effects (Vergnolle et al. 2001) of PARs. Our work has led pharmaceutical industry to launch programs on PAR inhibitors and protease inhibitors for the treatment of inflammation and pain, which are currently still on- going and for some of them in clinical phases.

ABSTRACT

Mucus and Protease in IBS. A Dynamic Triad at the Mucosal Interface

Irritable bowel syndrome (IBS) is a prevalent disorder of gut-brain interaction characterized by abdominal pain, altered bowel habits, and impaired quality of life. Although its pathophysiology is multifactorial, increasing evidence points to a critical role of the intestinal mucosal interface, where luminal contents interact with the host epithelium. Among the key regulators of this environment are proteases and the mucus layer, which together contribute to intestinal homeostasis and barrier function.

Proteases derived from the host, immune cells, microbiota, and diet are important modulators of gastrointestinal physiology. In IBS, altered protease activity has been consistently associated with epithelial barrier dysfunction and visceral hypersensitivity. Many of these effects are mediated through protease-activated receptors (PARs) and related signaling pathways that regulate epithelial and neuronal responses, but the effects of proteases on mucus processing are also important. Indeed, the intestinal mucus layer forms the first line of defense between luminal factors and the epithelium. Alterations in mucus composition, structure, and turnover have been reported in subsets of IBS patients. Dysregulated proteolytic activity can degrade mucins and mucus-associated proteins, compromising barrier integrity and increasing exposure of underlying tissues to luminal mediators. Conversely, changes in mucus properties may influence the localization and activity of proteases within the gut lumen.

This presentation will explore the bidirectional interactions between proteases and mucus in IBS, highlighting their contribution to epithelial dysfunction and visceral pain, and discussing their potential as therapeutic targets.

FREE PAPERS

WORKSHOP I

ABSTRACT CODE: IBS25609-84

Post-inflammatory dysbiosis fuels visceral abdominal pain through an altered host-microbiota interaction: mechanistic insights into the effects of faecal microbiota transplantation

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Objective: Chronic gastrointestinal pain persists in many patients with inflammatory bowel disease even during remission, resembling irritable bowel syndrome (IBS post-IBD), and represents an unmet medical need. Microbiota manipulation modulates visceral sensitivity, but clinical translation remains controversial. This study aimed to elucidate how post-inflammatory dysbiosis contributes to pain persistence to improve therapeutic strategies.

Methods: Two preclinical models of post-inflammatory visceral pain were investigated, induced by 2,4-dinitrobenzenesulfonic acid or dextran sodium sulphate, respectively. The modulation of microbiota-related environment was achieved through faecal microbiota transplantation (FMT) or faecal supernatant (FS) rectal instillation, and pain was assessed via visceral-abdominal responses to colorectal distension. Microbiota-to-host signalling was investigated using integrated transcriptomic, metabolomic, and proteomic analyses on faeces and colon from FMT recipients. Microbiota influence on epithelial-neuronal crosstalk was explored using murine colon organoids and primary dorsal root ganglia (DRG) neurons, which are responsible for transmitting pain signals, by evaluating epithelial function and neuronal excitability.

Results: FMT from hypersensitive donors induced visceral hyperalgesia in naïve controls (Disease Protocol), whereas FMT from healthy donors alleviated pain in post-colitis animals (Therapy Protocol). No specific microbial signature was associated with pain phenotype; however, a distinct metabolomic profile is consistently detected in hypersensitive animals. Notably, altered purine metabolism emerged as a shared pathway linking dysbiosis to neuronal sensitization. Proteomic analysis of colon tissue revealed modulation of pathways related to epithelial integrity, immune activation, and neuroplasticity underlying pain transfer mediated by FMT (Disease Protocol), while pain relief was associated with reduced lymphocyte activation and mast cell infiltration in post-colitis animals (Therapy Protocol). Microbiota-free FS from dysbiotic donors induced visceral hypersensitivity in vivo and impaired epithelial growth and metabolism, including purine pathways, in colon organoids. Epithelial dysfunction altered the expression of cytokines, proteases, and neuromodulators. Combined microbial and epithelial signals increased DRG neuron excitability and activation markers in vitro.

Conclusions: Microbiota-mediated modulation of visceral pain is shaped by colon tissue condition. Post-inflammatory dysbiosis drives pain through integrated microbiota-epithelium-neuron signalling, with dysregulated purine metabolism potentially representing a central mechanistic axis. Targeting epithelial-neuronal crosstalk may offer novel therapeutic strategies for IBS post-IBD.

nses and clinical findings.

WORKSHOP I

ABSTRACT CODE: IBS25654-84

Effects of γ -aminobutyric acid (GABA) supplementation on symptoms, quality of life, intestinal permeability, systemic inflammation and gut microbiota in patients with IBS-D: a randomized, double blind, placebo-controlled, crossover pilot study

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Background/Objectives: Recent studies have shown that γ -aminobutyric acid (GABA) reduces visceral hypersensitivity and improves intestinal permeability in a post-inflammatory irritable bowel syndrome (IBS) rat model. We aimed to assess the efficacy of a GABA-based supplement in IBS patients with diarrhea (IBS-D), focusing on symptoms relief, quality-of-life improvement, mucosal barrier function, systemic microinflammation and gut microbiota.

Methods: In this double-blind, placebo-controlled, crossover study, 20 IBS-D patients were randomized to receive GABA or placebo for two 4-weeks treatment periods separated by a 2-week washout. Efficacy on symptoms and quality of life was assessed using IBS Symptom Severity Score (IBS-SSS) and Short-Form Health Survey-36 (SF-36), respectively. Circulating levels of lipopolysaccharide-binding protein (LBP), Tumor Necrosis Factor- α (TNF- α) and interleukin (IL)-1 β were measured before and after each treatment. Microbiota analysis was performed before and after each treatment using metagenomic sequencing.

Results: Eighteen patients completed the study. A clinical response (≥ 50 -point reduction in IBS-SSS) was observed in 66.7% of patients during GABA treatment versus 33.3% with placebo. GABA produced a significant reduction in the IBS-SSS total score ($p=0.02$) and in the bowel satisfaction item of the questionnaire ($p=0.02$). Regarding quality of life, GABA significantly improved the "Emotional limitation" domain compared with placebo ($p=0.009$). GABA treatment also led to a decrease in circulating LBP ($p=0.06$) and IL-1 β ($p=0.02$) levels compared to placebo, although only the reduction in IL-1 β reached statistical significance. In contrast, no substantial remodeling of the gut microbiota was observed.

Conclusions: In this pilot study, GABA treatment led to a significant improvement in IBS-D symptoms compared with placebo and was also more effective in enhancing emotional wellbeing. GABA appeared to have a possible effect on intestinal permeability indirectly assessed through LBP, consistent with preclinical findings, and significantly reduced systemic inflammation. GABA may represent a promising therapeutic option for IBS, deserving further investigation in larger clinical trials.

WORKSHOP I

ABSTRACT CODE: IBS25635-83

Distinct faecal microbiota signatures in IBS-D patients with bile acid diarrhoea are associated with SeHCAT-defined disease severity

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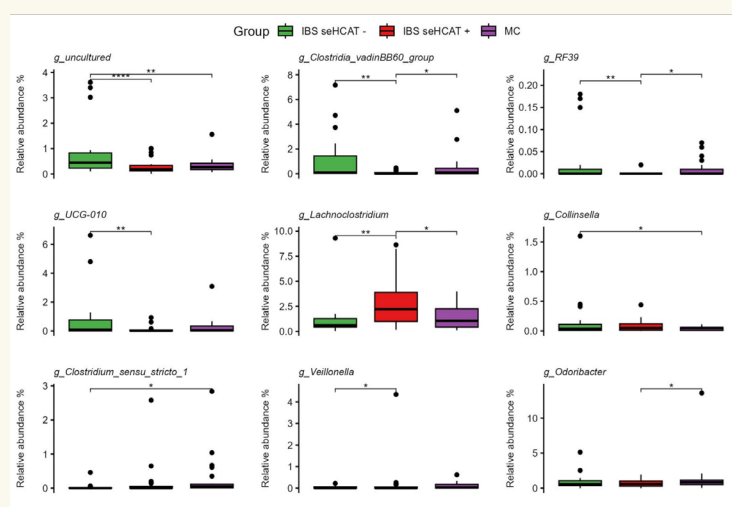
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Objective: to investigate and compare the diversity and composition of the faecal microbiota in patients with chronic diarrheal conditions, including IBS-D (with and without idiopathic bile acid diarrhea, BAD) and microscopic colitis (MC), and to explore associations with demographic, clinical and biochemical features, as well as intestinal permeability.

Methods: Faecal samples were collected, clinical and biochemical data were recorded from IBS-D patients fulfilling Rome IV criteria (n=48) and patients with microscopic colitis (MC; n=23). The presence of BAD in IBS-D patients was assessed using SeHCAT testing (<15%), classifying IBS-D patients into IBS-D-SeHCAT+ (n=27) and IBS-D-SeHCAT- (n=21). Participants completed validated questionnaires assessing IBS severity (IBS-SSS), bowel habits as stool frequency and consistency (BSFS), chronic stress (Holmes), visceral sensitivity index (VSI). Intestinal permeability was measured in vivo using a multi-sugar (lactulose-mannitol-sucralose) test analyzed by GC-MS. Faecal microbiota composition was determined by 16S rRNA sequencing, and diversity and taxonomic differences were compared between groups.

Results: IBS-D-SeHCAT+ patients had a significantly higher BMI than the other groups (ANOVA, $p < 0.05$), with a positive correlation with 7-day SeHCAT retention. Clinical, biochemical, and permeability parameters were otherwise similar between groups. However, IBS-D-SeHCAT+ patients showed significantly reduced alpha diversity scores compared with IBS-D- (ANOVA, $p < 0.05$). Moreover, IBS-D-SeHCAT+ also exhibited a distinct microbial profile, with nine genera differentially abundant (figure 1): Uncultured, Clostridia vadinBB60, RF39, UCG-010, Lachnoclostridium, Colinsella, Clostridium sensu stricto, Veillonella, and Odoribacter. Notably, the abundance of Lachnoclostridium ($\rho = -0.44$), Clostridia vadinBB60 ($\rho = 0.52$), and UCG-010 ($\rho = 0.44$) were significantly associated with the severity of BAD (SeHCAT values) (all $p < 0.01$). UCG-010 abundance also correlated with higher stress scores ($\rho = 0.31$, $p < 0.01$). Additionally, RF39 and UCG-010 were positively associated with colonic permeability (urinary sucralose excretion; $\rho = 0.25$, $p < 0.01$ for both).

Conclusion: IBS-D patients with BAD present a distinct gut microbiota profile, characterized by reduced richness and differential abundance of specific bacterial genera. Associations between microbial signatures with the severity of idiopathic bile acid diarrhoea suggests a potential microbiota-based biomarker profile in these patients.



Boxplots of nine differentially abundant genera. Pairwise differences Tukey's post-hoc test *: p -value < 0.05 ; ** < 0.01 ; *** < 0.001 ; **** $< 1e-04$.

WORKSHOP I

ABSTRACT CODE: IBS25686-89

Clinical Differences Between Irritable Bowel Syndrome and Irritable Bowel Syndrome with Bile Acid Malabsorption in Patients Undergoing SeHCAT Testing

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Introduction: Bile acid malabsorption (BAM) is an under-recognized cause of chronic diarrhea and is increasingly reported in irritable bowel syndrome (IBS). This study aimed to compare clinical characteristics, gastrointestinal symptoms, quality of life and psychometric profile between patients with IBS with or without BAM undergoing SeHCAT testing, to identify factors associated with IBS-BAM and with response to cholestyramine.

Methods: We retrospectively analysed patients undergoing SeHCAT testing for chronic diarrhea between January 2018 and December 2023. Patients were contacted for clinical data collection and validated questionnaires assessing DGBI rates, quality of life, gastrointestinal symptoms, anxiety, depression, somatic symptoms, and work productivity. Patients were classified as IBS-BAM or IBS without BAM according to Rome IV and SeHCAT results. Demographic, clinical, symptomatic and psychometric variables were compared. Logistic regression explored factors associated with IBS-BAM and cholestyramine response

Results: One-hundred and sixty patients underwent SeHCAT testing for chronic diarrhea. Of 84 patients completing data collection, 51 fulfilled Rome IV criteria for IBS: 25 with SeHCAT-confirmed BAM and 26 without BAM. Among 33 patients not fulfilling Rome IV IBS criteria, 26 had functional diarrhea, including 10 with BAM and 16 without BAM. IBS-BAM and IBS without BAM showed overlapping clinical and psychometric profiles. IBS-BAM patients were younger and more frequently had previous gastrointestinal surgery and cholecystectomy, whereas inhalant allergies and recent antibiotic use were more frequent without BAM. Psychometric domains did not differ, but IBS-BAM patients showed worse physical quality-of-life scores. In univariable analysis, IBS-BAM was associated with age and previous gastrointestinal surgery, whereas inhalant allergy, hunger pain and nausea were inversely associated. In multivariable analysis, previous gastrointestinal surgery remained independently associated with IBS-BAM (OR 9.09, 95% CI 1.47-56.11, $p=0.017$), whereas nausea remained inversely associated (OR 0.56, 95% CI 0.34-0.93, $p=0.023$). Cholestyramine was associated with symptomatic improvement in 70% of treated patients; response was associated with female sex and absence of smoking.

Conclusions: In chronic diarrhea patients with IBS undergoing SeHCAT testing, IBS-BAM and IBS without BAM showed overlapping profiles, although previous gastrointestinal surgery was independently associated with IBS-BAM and nausea was inversely associated. Cholestyramine improved symptoms in 70% of treated IBS-BAM patients.

WORKSHOP I

ABSTRACT CODE: IBS25612-78

Effectiveness of Digital Nutrition Education Based on NICE Guidelines Versus Nordic Nutrition Recommendations for IBS Over A 12-Month Period: A Randomized Controlled Trial

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Objectives: The NICE guidelines, focusing on eating behavior modifications, are recommended as first-line dietary treatment to patients with irritable bowel syndrome (IBS) although the evidence is limited because it has often served as control rather than active intervention in clinical trials. Dietary recommendations based on Nordic Nutrition Recommendations (NNR), evidence-based guidelines for healthy eating in the general population, have not yet been studied in IBS and was therefore employed as a sham diet in this randomized controlled trial, comparing the effectiveness of digital nutritional education of these dietary principles.

Methods: Adults with IBS were randomized to receive digital 90-minute group nutritional education based on NICE or NNR (n=6-12), including education on IBS pathophysiology and written materials. Digital questionnaires were completed at baseline, after 6 weeks, 6- and 12-months, assessing symptom severity (IBS-SSS), psychological distress (HADS), somatic symptoms (PHQ-15), and food-related quality of life (FR-QoL-29).

Results: Of 239 randomized participants (122 NICE, 117 NNR), 197 attended the educational session (women 79%, age 32±9 years). Follow-up responses were n=123, n=82, and n=77 at 6 weeks, 6- and 12 months, respectively. Linear mixed model regression revealed improvements in IBS-SSS at 6 weeks in both groups, with continued improvements at 6 and 12 months (NICE: -30, -64, -68; NNR: -45, -55, -46), with no differences between groups at any timepoint. Per protocol analysis showed no changes in psychological distress or somatic symptoms, while FR-QoL improved in the NICE group at month 6 and 12 (both, $p<0.001$) and in the NNR group at month 12 ($p<0.05$).

Conclusion: A 90-min digital group session based on either NICE or NNR principles led to modest but sustained reduction in symptom severity over a 12-month period. The NICE-based education did not outperform the NNR-based education. Digital dietary interventions may be a valuable treatment option for patients with IBS when resources for individual counselling are lacking.

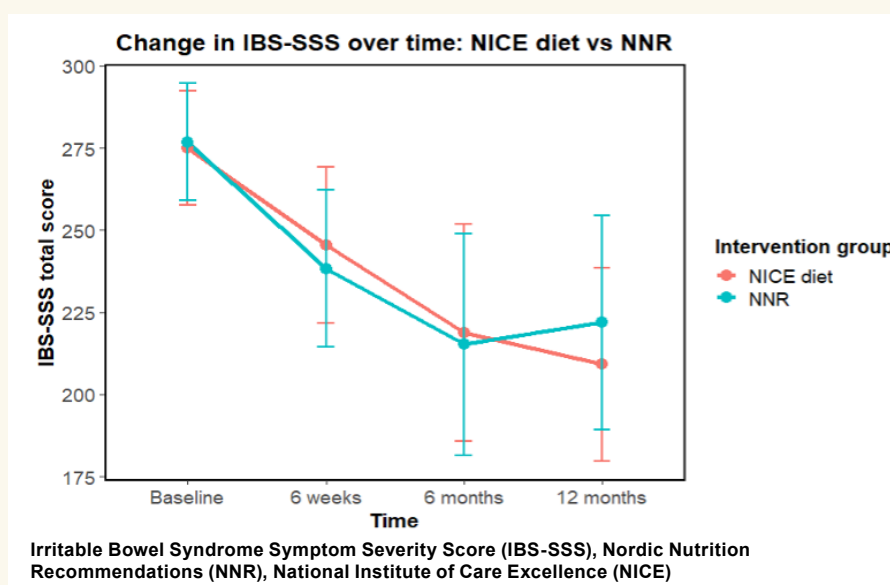


Figure 1. Change in IBS-SSS from baseline to 6-week, 6 month and 12 month follow up.

WORKSHOP II

ABSTRACT CODE: IBS25600-75

Nutritional adequacy and dietary patterns in patients with irritable bowel syndrome with symptoms of avoidant/restrictive food intake disorder

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Introduction: Food is a well-known trigger of symptoms in patients with irritable bowel syndrome (IBS), which may lead to dietary restriction. If severe and prolonged, such restriction may impact nutritional status or psychosocial functioning and meet criteria for avoidant/restrictive food intake disorder (ARFID). However, ARFID symptoms do not necessarily imply nutritional inadequacy, and dietary patterns remain poorly characterized. We aimed to assess nutritional adequacy and dietary patterns in IBS patients reporting ARFID symptoms.

Method: Primary care patients with IBS referred to dietary treatment were invited to participate in a randomized controlled trial. In total, 239 patients were recruited; baseline reliable dietary data (<600 kcal/day or >4500 kcal/day excluded) was available for 164. Dietary intake was assessed using a food frequency questionnaire (Meal-Q). Food avoidance defined as intake < 4 times per month. ARFID symptoms were defined using established cutoffs of the Nine Item ARFID Screen (NIAS), and ARFID symptom severity was assessed using the total NIAS score. Nutritional adequacy was evaluated against Nordic Nutrition recommendations after energy adjustment. Group comparisons were performed using independent t-test and linear or logistic regression adjusted for age and sex.

Results: Among 164 patients (76.2% female, 32.3 ± 8.7 years), 28.7% (n=47) reported ARFID symptoms. ARFID symptom severity was associated with greater food avoidance ($\beta=0.08$, [0.04,0.12])(Figure 1), lower energy intake ($\beta=-11.2$ kcal per NIAS unit increase, 95%CI [-0.22,-0.01]) and but no difference in nutrients below average requirement ($\beta=0.04$, [-0.0,0.08]). ARFID symptoms were associated with a higher proportion of energy from carbohydrates and fibre, and a lower proportion from fat. Micronutrient intake was similar overall, although patients with ARFID symptoms had higher intakes of folate and magnesium (indicating intake of green leafy vegetables, pulses, and whole grains).

Conclusion: ARFID symptoms are associated with greater food avoidance, lower energy intake but no increased risk of nutritional inadequacy. The pattern suggests partial nutritional compensation. ARFID symptoms do not necessarily imply a strong nutritional risk in IBS, but guidance to limit unnecessary food avoidance remains important.

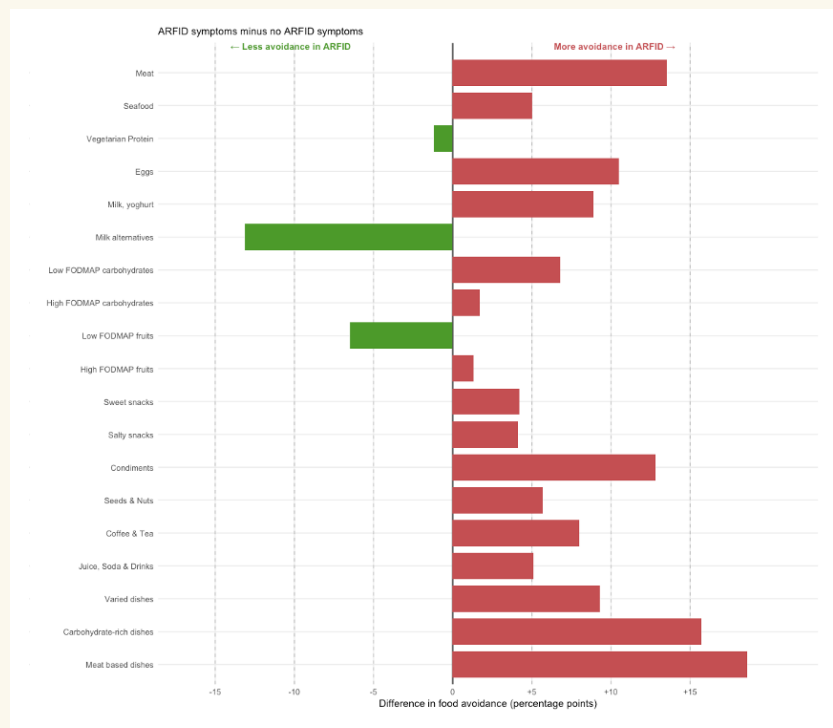


Figure 1. Food avoidance in patients with irritable bowel syndrome with versus without symptoms of avoidant/restrictive food intake disorder (ARFID)

WORKSHOP II

ABSTRACT CODE: IBS25669-90

Distinct frequencies of small bowel homing B-lymphocytes in patients with IBSL. Balsiger ¹, P. Baetens ², K. Raymenants ¹, C. Van De Bruaene ¹, J. Schol ¹, J. Toth ¹, M. Ceulemans ¹, K. Van Den Houte ¹, Y. Zopf ³, W. Dieterich ³, E. Burri ⁴, T. Vanuytsel ¹, N. Hellings ², J. Tack ¹

((1) TARGID KU Leuven - Belgium, (2) Hasselt University, Diepenbeek - Belgium, (3) Friedrich-Alexander Universität Erlangen - Germany, (4) Kantonsspital Baselland - Switzerland)

Introduction: Although the pathophysiology of irritable bowel syndrome (IBS) is not fully understood, there is increasing evidence that intestinal and systemic immune cell activation plays an important role. In-depth analysis of both intestinal and systemic immune cell profiles and association with patient phenotype are lacking.

Aim: To assess whether patients with IBS present with a distinct duodenal and systemic immune endotype and to investigate whether the immunological endotype is linked with daily symptom perception.

Methods: Exploratory cross-sectional study of patients with IBS and age- and sex-matched healthy controls (HC). Symptoms were assessed daily using visual analog scales (reported as the mean of two weeks). Peripheral blood mononuclear cells (PBMCs) were analyzed using flow cytometry. Systemic and mucosal inflammatory markers were measured (panel and gating strategy in Figure 1) and eosinophil and mast cells were histologically quantified in duodenal tissue. Group-wise comparisons and correlation with daily symptoms were performed.

Results: Twenty-six patients with Rome IV IBS and 13 age- and sex-matched HC were included in this analysis. Patients with IBS had significantly higher tryptase content in the duodenal mucosa than HC (317 ng/mg total protein vs 152 ng/mg, $p = 0.028$) – none of the other mucosal variables differed between patients and HC. The proportion of small bowel homing (CCR9+ α 4 β 7+) B -cells in PBMCs was significantly higher in HC than IBS (14% of B -cells vs 7%, $p = 0.005$). No difference was observed in the analyzed T -cell fractions. When exploring correlations with daily symptom severity, hsCRP was positively correlated with severity of daily pain ($r = 0.55$, $p = 0.008$), as were total white blood cell counts (WBC) ($r = 0.55$, $p = 0.007$). WBC were also positively correlated with severity of daily bloating ($r = 0.51$, $p = 0.014$). Small bowel homing T-cells and Th1-cells were negatively correlated with daily urgency ($r = -0.059$, $p = 0.004$ and $r = 0.6$, $p = 0.003$).

Conclusion: In this exploratory study, we found lower frequencies of small bowel homing B-cells in IBS and a negative correlation of small bowel homing T-cells with perceived daily urgency. These observations support a role for peripheral immune cell populations in IBS pathogenesis.

T cell markers (CD20-CD3+)	B cell markers (CD 20+)	Others	Small bowel homing	Systemic inflammatory markers
CD8+	IgG+ B cells	Monocytes	A4B7+ CCR9+ Subpopulation	hsCRP, Tryptase, IgE
CD4+	IgE+ B cells	CD14+ Monocytes		Mucosal inflammatory markers
TNaive (CCR7+)				Tryptase, Tryptase release, ECP, EDN release, IgE
Th17 (CD4+CCR4-CXCR3-CCR6+)				
Th2 (CD4+CCR4+CXCR3-CCR6-)				
Th1 (CD4+CCR4-CXCR3+CCR6-)				
Th17.1 (CD4+CCR4-CXCR3+CCR6+)				

WORKSHOP II

ABSTRACT CODE: IBS25265-82

Fasting quantitative motor differences and increased postprandial motility index in patients with IBS despite normal small bowel manometry

C. Von Muhlenbrock ¹, A.M. Madrid ², J. Tack ¹, T. Vanuytsel ¹

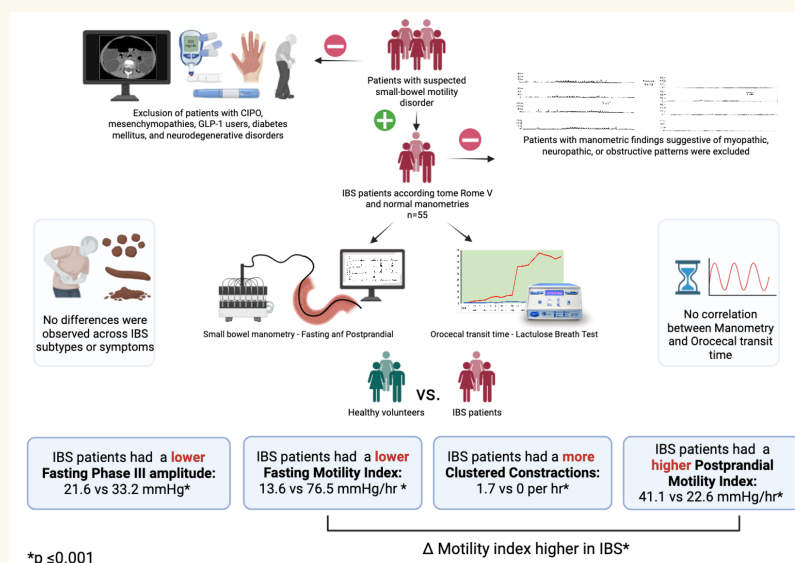
(1) KU Leuven - Belgium, (2) Universidad de Chile - Chile

Introduction and Aims: Irritable bowel syndrome (IBS) is a disorder of gut-brain interaction in which alterations in gastrointestinal motor function have been proposed, although small-bowel physiology remains incompletely characterized. We aimed to evaluate fasting and postprandial small-bowel manometric patterns in patients with IBS fulfilling strict criteria for normal manometry and to examine their relationship with orocecal transit time (OCTT) compared with healthy controls.

Methods: In this retrospective observational study, patients meeting Rome IV criteria for IBS underwent standardized small-bowel manometry and lactulose hydrogen breath testing at a tertiary referral center. Individuals with structural abnormalities, comorbidities affecting gastrointestinal motility, or abnormal manometric patterns were excluded. Healthy volunteers studied using the same protocol served as controls. Fasting and postprandial motor parameters, migrating motor complex characteristics, and correlations with OCTT were analyzed.

Results: Fifty-five IBS patients (92% female; 38±19 years) and 20 healthy controls (60% female; 39 ±22 years) were included. All recordings met strict criteria for normal small-bowel manometry. Compared with controls, IBS patients showed lower phase III amplitude, reduced fasting motility index, and higher clustered contractions activity during fasting, together with a greater postprandial increase in motility index (all $p < 0.001$). Phase III frequency and duration were similar between groups, and findings did not differ across IBS subtypes. OCTT was longer in IBS but was not associated with manometric parameters or predominant symptoms.

Conclusions: Despite normal conventional manometry, patients with IBS exhibited subtle fasting motor differences and an enhanced postprandial response, suggesting that quantitative small bowel motor differences may exist beyond classical manometric classifications. Small bowel manometry findings were not related to transit time or symptom phenotype, supporting partially independent physiological dimensions within IBS.



WORKSHOP III

ABSTRACT CODE: IBS25627-84

Colonic Mast Cell activation is linked to mental and somatic symptom severity in Irritable Bowel Syndrome: results from the DISCOvERIE project

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Objective: To characterize mast cell (MC) activation in the colonic mucosa of patients with irritable bowel syndrome (IBS), with or without mental comorbidities (depression, anxiety) and/or somatic comorbidities (fibromyalgia and/or chronic fatigue), and to evaluate its role in clinical severity.

Methods: Healthy volunteers (HV, n=10) and IBS patients fulfilling Rome IV criteria were prospectively recruited across five European hospitals: IBS without comorbidity (IBS-A, n=9); IBS with mental comorbidity (IBS-Co, n=10) and IBS with both mental and somatic comorbidities (IBS-Mco, n=10). Colonic mucosal biopsies and clinical information were obtained from all participants. Validated questionnaires were used to assess IBS severity (IBS-SSS), depression (PHQ-9), anxiety (GAD-7), fibromyalgia (FIQ), chronic fatigue (MFI), and other physical symptoms (PHQ-15). Mast cell activation was characterized by anti-tryptase immunohistochemistry and transmission electron microscopy (TEM). Tryptase+ cells were quantified per high-power field, and the percentage of tryptase-stained area in the lamina propria was analyzed using QuPath software. MC ultrastructure, including granule morphology, degranulation profile, and proximity to nerve fibres, was evaluated by TEM.

Results: All groups showed similar MC infiltration in the lamina propria and epithelium. However, IBS-Co and IBS-Mco groups exhibited higher % of tryptase-stained area compared to IBS-A (p=0.038, p=0.021, respectively). Ultrastructurally, HV-MCs showed more electrodense core pattern granules, while IBS groups showed a predominant scroll pattern. IBS-Mco showed higher % of MCs with a very high activation profile (vesicles fusion and piecemeal) compared to HV (p=0.009) and IBS-A (p=0.031). Furthermore, IBS-Co and IBS-Mco groups had higher % of MCs in close proximity (<5 µm) to nerve fibres compared to HV (p=0.013). Notably, the % of tryptase-stained area correlated with PHQ15 (r =0.352; p=0.04), MFI Mental (r =0.438; p=0.01) and MFI physical fatigue (r=0.376; p=0.03); and the % of MC <5 µm to nerve fibres with IBS-SSS (r=0.56; p=0.03).

Conclusion: Mast cell activation, regardless of mast cell count, is a clinical marker of abdominal pain and of greater severity of both mental and somatic symptoms in IBS, indicating the involvement of MCs in the pathophysiology of IBS with comorbidities. Further studies are needed to characterize the interaction between MCs and the symptoms associated with disorders of the brain-gut axis.

WORKSHOP III

ABSTRACT CODE: IBS25626-83

Transcriptomic and Proteomic Profiling of Colonic Mucosa in Patients with Irritable Bowel Syndrome with or without Mental/Somatic Comorbidities: Results from the European Multicenter Discoverie Study

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Objective: To characterize the transcriptomic and proteomic profiles of colonic mucosa in irritable bowel syndrome (IBS) patients with or without mental and/or somatic comorbidities compared with healthy subjects.

Methods: IBS patients and healthy volunteers (HV) were recruited across five European centers. Colonic biopsies, demographic and clinical variables, including symptom severity scores for IBS (IBS-SSS), depression (PHQ-9), anxiety (GAD-7), somatic symptoms (PHQ-15), fibromyalgia (FIQ), and fatigue (MFI) were collected. RNA was extracted and analyzed by RNA sequencing (RNA-seq). Libraries were prepared using TruSeq Stranded mRNA (Illumina) and sequenced on a NovaSeq 6000 platform. Differential gene expression (DE) analysis was performed using the DESeq2 package in R, with gene-level validation by qPCR. Proteomic analysis was performed through LC-MS/MS and quantified using Proteome Discoverer 2.5. Protein DE was assessed using the limma package in R.

Results: A total of 174 subjects (131 IBS patients and 43 HV) were included. For transcriptomic analysis, a subset was randomly selected comprising 20 HV (10 male/10 female) and 60 IBS patients (17 M/43 F), stratified into IBS without comorbidities (IBS-A: n=20), IBS with anxiety and/or depression (IBS-Co: N=20), and IBS with both mental and somatic comorbidities (IBS-MCo; N=20). Symptom severity scores for IBS, depression, anxiety, somatic symptoms, fibromyalgia, and fatigue increased progressively along with the number of comorbidities ($p < 0.001$). In colonic mucosa, seven DE genes were identified between HV and IBS-MCo ($FDR < 0.1$), two of which were related to barrier function and immune response. qPCR confirmed increased expression of both genes in IBS ($p = 0.023$ and $p = 0.083$). Proteomic analysis identified 271 DE proteins in IBS-MCo compared with HV. These proteins were enriched in pathways related to DNA/RNA processing and extracellular matrix-receptor interaction, oxidative phosphorylation, and thermogenesis. Additionally, 18, 12, and 3 DE proteins were identified in IBS-A, IBS-Co, and IBS-MCo, respectively. Interestingly, 46 DE proteins were identified in HV compared with IBS, of which 4 were consistently DE across all three IBS subgroups.

Conclusions: Integrated transcriptomic and proteomic analysis of colonic mucosa reveals distinct molecular alterations in IBS patients according to comorbidity burden. Several potential diagnostic biomarkers emerged from this analysis. Further validation studies are required to confirm these findings.

WORKSHOP III

ABSTRACT CODE: IBS25580-82

Beyond a uniform symptom: anatomical distribution of bloating and associated clinical features, an analysis from the AEGIS study

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Introduction: Bloating is a common symptom in disorders of gut-brain interaction (DGBI) such as irritable bowel syndrome (IBS) and functional dyspepsia (FD). Although often treated as uniform, bloating may differ across DGBIs and abdominal locations. As bloating characteristics may influence clinical features, psychological comorbidities or treatment response, clarifying these differences may improve diagnosis and management.

Aim: To identify bloating location clusters in DGBI patients and assess associations with symptoms, psychological scores and treatment factors.

Methods: Data from 1074 DGBI patients from 11 centers across Europe (n=571) and Asia (n=503) was analyzed. Participants completed Rome IV and symptom questionnaires on bloating location (9 regions over the abdomen: upper, mid, lower vs left, middle, right; Figure 1 left), meal relation, relief factors and medication use. Location-based clusters were compared for symptom frequency, psychological scores, DGBI classification, meal relation and bowel habit changes using Bonferroni-adjusted tests.

Results: Bloating occurred in 799 patients, revealing seven distinct clusters (Figure 1 right).

Hypogastric-only bloating occurred less frequently than epigastric, umbilical+hypogastric, epigastric+umbilical+hypogastric and six-lower-region bloating ($p<0.05$ – 0.0001). Six-lower region bloating correlated with more symptoms than umbilical-only bloating. ($p<0.05$).

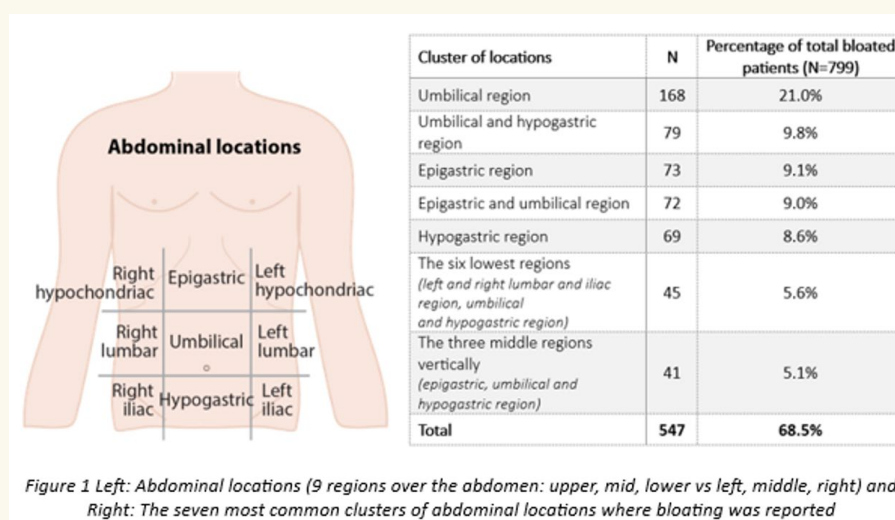
FD was less common in umbilical-only and hypogastric-only bloating ($p<0.05$), specifically FD-PDS in umbilical only ($p<0.001$) and FD-EPS in hypogastric-only ($p<0.05$). IBS was less prevalent in umbilical-only ($p<0.05$), but higher in six-lower-region bloating ($p<0.01$). Functional bloating, constipation and diarrhea showed no significant differences.

Epigastric-only bloating was associated with lower depression, anxiety and somatization than other clusters, particularly umbilical and lower regions ($p<0.01$).

Meal-related bloating occurred in 55% of the cases but was less frequent in umbilical-only bloating ($p<0.05$). Relief by bowel movement was highest in umbilical-only bloating ($p<0.01$). Meal relation did not affect likelihood of relief by bowel movement.

Hypogastric-only bloating was associated with softer stools ($p<0.05$). Harder stools were more common in umbilical+hypogastric bloating, while mixed stool forms were linked to bloating across the middle abdomen (epigastric-umbilical-hypogastric, $p<0.05$).

Conclusion: Bloating in DGBI is heterogeneous, varying by anatomical location and its relationship to meals and stool patterns. Identifying location-based symptoms underscores the need for location-specific diagnostic and therapeutic strategies. Future research should explore whether interventions targeting bloating distribution can improve patient outcomes.



WORKSHOP III

ABSTRACT CODE: IBS25604-79

GWAS of stool consistency and in vivo functional validation identify causal genes underlying gut motility

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Background: Gut (dys)motility endophenotypes have emerged as a validated tool for dissecting genetic and molecular contributors to irritable bowel syndrome (IBS) and other gastrointestinal (GI) disorders. Here, we apply and expand this approach to converge on the molecular pathways that control GI transit time.

Methods: We performed a genome-wide association study (GWAS) meta-analysis of stool consistency (hard stool [HS] and loose stool [LS]) in 173,346 individuals of European ancestry, based on suitable genotype and questionnaire data from UK Biobank and LifeLines. Heritability and genetic correlations with other traits were estimated. Individual association signals were functionally annotated and fine mapped to prioritize genes/variants and corresponding causative mechanisms. Selected candidate causal genes from fine-mapped loci were functionally evaluated in zebrafish using F0 CRISPR genome editing approaches to assess their functional role in relation to GI transit and gut motility parameters.

Results: HS and LS showed similar SNP-based heritability (5.0% and 4.9%, respectively) and opposite genetic effects, reflected also in their (inverse) genetic correlations with stool frequency, IBS and its subtypes. Gene set and pathway analyses implicated mechanisms associated with neuronal signalling, immune modulation, and epithelial barrier integrity. GWAS meta-analysis identified a total of 14 association signals, three of which in common between LS and HS and with opposite genetic effects on stool consistency. Fine mapping and colocalization analyses highlighted rs11240504 and rs12700027 as likely causative variants, respectively affecting the expression of gene pairs CDK18/NFASC and LFNG/BRAT1. Zebrafish studies revealed slower GI transit time, an increase in incomplete contractions and abnormal retrograde contractions in F0 crispants targeting the human LFNG ortholog lfng (coding for the lunatic fringe O-Fucosylpeptide 3-Beta-N-Acetylglucosaminyltransferase). F0 crispants targeting the two zebrafish orthologues of NFASC (coding for neurofascin), nfasca or nfacsb (coding for neurofascin) showed more frequent incomplete contractions but no significant changes in GI transit time.

Conclusions: Stool consistency is a genetically informative gut motility endophenotype that captures biologically meaningful mechanisms relevant to IBS. LFNG-driven mechanisms may represent new actionable pathways to control gut (dys)motility.

POSTER SESSION

ABSTRACT CODE: IBS25637-85 – POSTER BOARD NO. 1

A novel probiotic mixture attenuates cognitive impairment and bowel symptoms in experimental Alzheimer's Disease

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Objective: Growing evidence supports a role for the microbiota-gut-brain axis in the pathophysiology of neurodegenerative disorders, including mild cognitive impairment and gastrointestinal dysfunctions in Alzheimer's disease (AD). Disruption of gut barrier—essential interface in gut-brain communication—may facilitate the translocation of gut-derived factors to the brain. We investigated whether a novel probiotic mixture (PM) could ameliorate cognitive decline and colonic dysmotility in a murine model of accelerated senescence, exhibiting early AD-like features.

Methods: SAMP8 mice (accelerated senescence, AD-prone) and SAMR1 mice (control strain) (n=6/group) received daily oral PM (1×10^9 AFU/mouse/day), containing *Lactiplantibacillus plantarum* LP14 (DSM 33401), *Levilactobacillus brevis* LBR01 (DSM 23034), and *Bifidobacterium adolescentis* BA02 (DSM 18351), or placebo for 2 months (age 4–6 months). Cognitive performance was assessed by Morris Water Maze and colonic transit by fecal pellet output. After sacrifice, colonic contractility and enteric neuronal populations (cholinergic, tachykininergic, nitrergic) were analyzed. Astrocyte (GFAP⁺) and microglial (Iba-1⁺) activation (neuroinflammatory markers), brain and colonic A β_{1-42} , IL-1 β , and claudin-5 (tight junction protein reflecting blood-brain barrier integrity) were evaluated. Gut barrier integrity was assessed by colonic mucin content, PV-1 expression (vascular permeability marker), and plasma LBP levels (bacterial translocation indicator). Perivascular glial cells (GFAP⁺), macrophages (F4/80⁺), and pericytes (PDGFR β ⁺) cells involved in microvascular inflammation and barrier regulation—were also evaluated.

Results: In SAMP8 mice, PM significantly improved cognitive performance and reduced astrogliosis and microgliosis. It also decreased brain and colonic A β_{1-42} and IL-1 β levels, while increasing brain claudin-5 expression. PM preserved gut barrier integrity, as indicated by restored mucin content, reduced PV-1 expression, and normalization of plasma LBP levels. PM reduced perivascular inflammation, decreasing GFAP⁺, F4/80⁺, and PDGFR β ⁺ cell expression around colonic vessels. Importantly, PM restored both in vivo and in vitro colonic motility, normalizing enteric neurotransmission and neuronal density.

Conclusion: PM administration attenuated AD-related pathology and associated intestinal motor dysfunctions in SAMP8 mice. These effects appear to involve preservation of gut mucosal/vascular barrier integrity, reduction of perivascular inflammation, and restoration of enteric neuronal function. These findings support the potential of this probiotic formulation as a therapeutic strategy for early-stage AD and related gastrointestinal symptoms.

ABSTRACT CODE: IBS25628-85 - POSTER BOARD NO. 2

Epithelial alterations and subtype-specific signatures in irritable bowel syndrome: insights from patient-derived intestinal organoids

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Objective: Irritable Bowel Syndrome (IBS) is a highly prevalent, debilitating functional gastrointestinal disorder. Alterations in the structure and functions of intestinal mucosa represent one of the key events in IBS pathogenesis, contributing to visceral pain and gut dysmotility. The present study aimed at characterizing the morpho-functional and molecular phenotypes of IBS patients' intestinal epithelium, using ex vivo three-dimensional cultures of colon organoids.

Methods: Crypts were isolated from colonic biopsies of well-characterized female IBS patients (N= 2 IBS-D, 2 IBS-C, and 1 IBS-M) and sex-matched healthy controls (HC; N=3). Organoids were cultured for up to 10 days. Morphological parameters (size, border thickness, luminal content), cellular composition (proliferation and differentiation markers expression), epithelial barrier integrity, as well as inflammatory, antimicrobial, and proteolytic mediators were assessed by immunohistochemistry or RT-qPCR.

Results: IBS-derived organoids exhibited a significantly larger size compared to HC, characterized by an increased proportion of large cystic structures and a higher number of Ki67⁺ proliferative cells. In addition, cultures from IBS patients showed a greater prevalence of columnar organoids, characterized by increased border thickness and darker luminal content, likely reflecting the presence of cellular debris and apoptotic material. Consistently, these morphological alterations were accompanied by an upregulation of epithelial differentiation markers, including SOX9 and YAP1. IBS-C organoids displayed the highest levels of proliferation and differentiation compared to HC and other IBS subtypes. Subtype-specific differences in epithelial gene expression were observed: IBS-C and IBS-D organoids exhibited increased CLDN4 expression, with no changes in CLDN1 or CLDN2, whereas IBS-M organoids showed upregulation of ZO-1. Notably, upregulation of F2 (2.3-fold) and antimicrobial peptides (LL37, 2.0-fold increase; HBD1, 2.75-fold) was observed exclusively in IBS-M cultures.

Conclusions: Our findings demonstrate that IBS colonic organoids exhibit distinct phenotypic features compared to those from HC, characterized by enhanced proliferation and differentiation, along with subtype-specific molecular signatures. These results support the use of patient-derived organoids as a relevant preclinical tool for precision medicine approaches in IBS, to dissect disease pathophysiology, and to identify patient-specific therapeutic strategies aimed at restoring epithelial barrier integrity and activity.

ABSTRACT CODE: IBS25645-84 - POSTER BOARD NO. 3

Evaluating in-vivo intraluminal colonic electrical activity in the context of ex-vivo ENS morphology in mice

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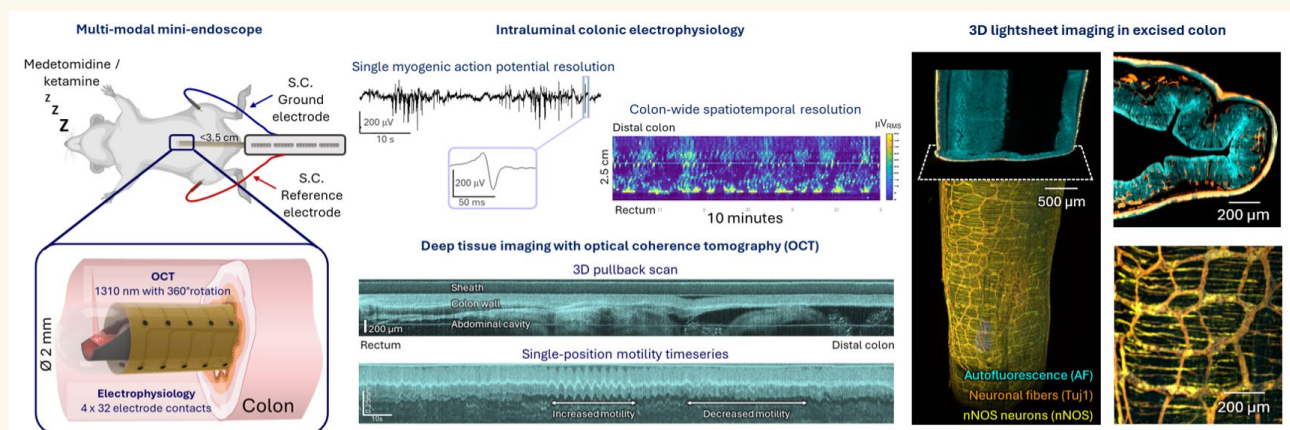
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Objectives: The Enteric Nervous System (ENS) plays a central role in the coordination of physiology underlying gut function and motility. To address limitations of in-vivo assessment in research of disorders of gut brain interaction, we developed a pipeline comprised of a minimally invasive endoscope carrying out longitudinal and multi-modal recordings.

Methods: The pipeline includes intraluminal electrophysiology and Optical Coherence Tomography (OCT) yielding high-resolution spatiotemporal information from the distal colon to rectum of anesthetized mice. It is completed with an ex-vivo 3D evaluation of ENS morphology using lightsheet microscopy to interpret function within anatomical context. Comparing recordings in-vivo and in organ bath preparations revealed that a fully functional ENS is required for coordination of myogenic electrophysiology signals underlying colonic activity.

Results: In 30-minute baseline recordings of electrophysiology in 128 electrodes over 2.5 cm of colon, propagating waves occur at an average rate of 2.2 cycles per minute (c.p.m.) in young healthy animals (25-39 weeks, 3m/5f) and are spatially distributed over at least 5 frequency bands. Parallel imaging of deep tissue layers with OCT showed consistent colon morphology between animals, including mucosa thickness and lymphoid follicle development. In a cohort of aged (52-56 weeks, 11m/8f) healthy animals, the frequency of propagating waves averaged 1.9 c.p.m. and showed wide inter-individual variation in spatiotemporal electrophysiology patterning. Furthermore, 3D evaluation of ENS morphology using Tuj1-labelled excised colon showed significant differences in neuronal network density between animals. However, preliminary analysis did not correlate reduced ENS network density with spatial patterns of electrical activity measured in-vivo.

Conclusion: By proposing a minimally invasive approach, this pipeline can measure gut motility and the physiological signals underlying this function at multiple time points throughout pathology development and therapeutic intervention. In disorders of gut brain interaction, and particularly irritable bowel syndrome, a better understanding of the relationship between patterns of colonic function and morphology will provide answers to improve patient care in the long run. With this, we aim to empower neurogastroenterologists at the research and clinical level by creating technologies to better address the need to measure direct physiological functions of the gut in the contexts of health and disease.



ABSTRACT CODE: IBS25597-90 - POSTER BOARD NO. 4

Intestinal barrier dysfunction: preclinical evaluation of the mechanism of action of a xyloglucan-pea protein combination

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Objective: Intestinal barrier dysfunction contributes to disorders of gut-brain interaction (DGBIs) by enabling luminal translocation, low-grade inflammation, and visceral hypersensitivity. Mucoprotective agents such as polysaccharides and proteins may restore mucosal integrity and improve gastrointestinal (GI) symptoms. Xyloglucan (XG) and pea protein (PP) have shown synergistic effects in improving DGBI symptoms. This study investigates the mechanism by which their combination (XGPP) restores intestinal homeostasis in a murine model of partial restraint stress (PRS).

Methods: Rats received daily XGPP by gavage for 7 days. On day 8, PRS was induced. Jejunum, ileum, and colon tissues were collected for analysis. Immunofluorescence assessed XG and mucin-2 localization; histology (H&E) evaluated tissue architecture; PAS staining assessed goblet cells and mucin; mast cell activation was measured via tryptase staining. Tight junction (TJ) proteins (ZO-1, occludin) were analyzed by immunohistochemistry. IL-1 β , IL-6, and ROS were quantified by ELISA. Intestinal permeability was assessed with FITC-dextran. Serum cortisol was measured before and after PRS.

Results: PRS induced morphological alterations, inflammatory infiltration, mucosal disruption, reduced mucus, and low-grade inflammation. XG localized near mucin-2, supporting its role in protecting the mucus layer and enhancing its barrier function. XGPP significantly improved histological scores in colon ($p<0.01$), jejunum, and ileum ($p<0.05$) vs PRS controls. It preserved goblet cells and mucin ($p<0.05$), increased TJ expression ($p<0.01$), and reduced permeability ($p<0.001$). These barrier-restorative effects resulted in decreased low-grade intestinal inflammation and oxidative stress, as shown by reduced levels of IL-6, IL-1 β , ROS ($p<0.05$) and mast cells activity in all intestinal segments ($p<0.01$). Finally, XGPP lowered systemic stress response, as indicated by decreased serum cortisol levels ($p<0.05$).

Conclusion: XGPP forms a protective barrier over the intestinal epithelium, restoring tissue integrity, preserving goblet cells, and reducing permeability. This interrupts the cycle of barrier dysfunction, inflammation, and oxidative stress. Furthermore, the observed reduction in serum cortisol levels and mast cell activation supports a beneficial impact on neuroimmune crosstalk along the brain-gut-stress axis, a key mechanism underlying DGBI exacerbation. By directly targeting barrier dysfunction, XGPP represents a mechanistically distinct approach that goes beyond symptomatic relief to address the underlying pathophysiology of gut-brain disorders.

ABSTRACT CODE: IBS25681-84 - POSTER BOARD NO. 5

Longitudinal in-vivo assessment of colonic inflammation and function using multimodal Optical Coherence Tomography and Electrophysiology

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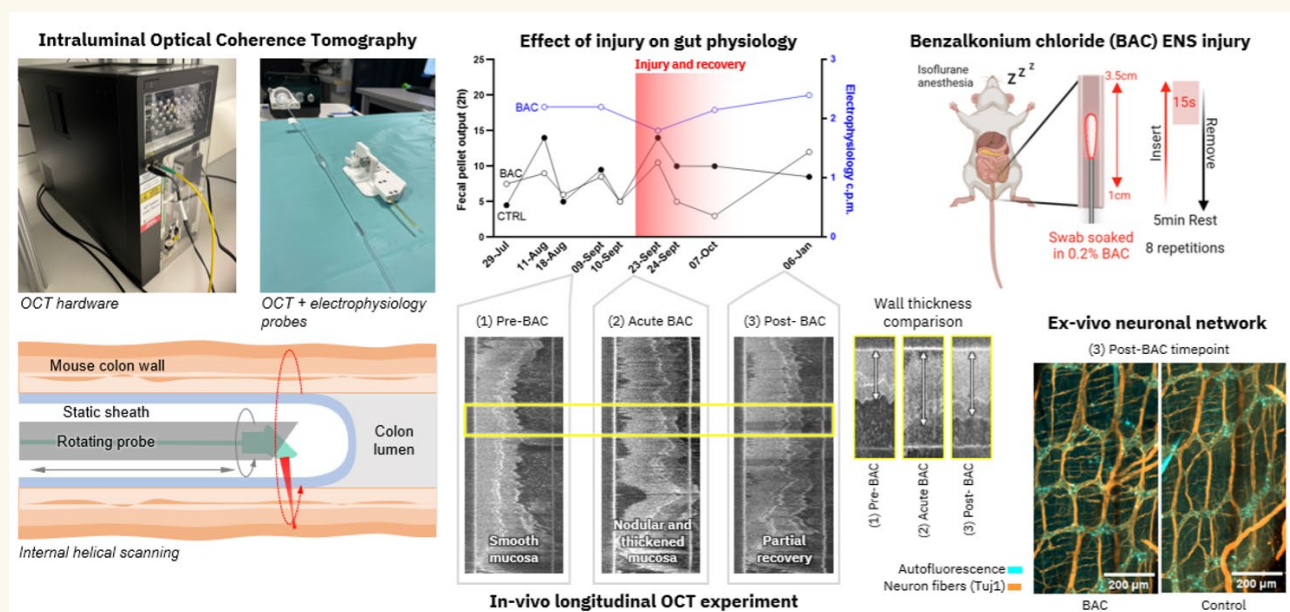
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Objective: Inflammation is a key component of Disorders of the Gut-Brain Interaction (DGBI), yet in-vivo assessment of localized inflammatory pathology in preclinical research remains challenging. Optical coherence tomography (OCT) has shown early potential for improving endoscopic diagnosis of inflammatory bowel disease (IBD) in humans and in mice. Here, we aim to better understand the link between inflammation and colonic function longitudinally, using in-vivo intraluminal measurements of electrophysiology and colonic wall morphology up to 3cm of the mouse colon.

Methods: We developed a mini-endoscope enabling volumetric OCT imaging from the distal colon to the rectum in anesthetized mice. The device is also equipped with an external matrix of electrodes recording smooth muscle electrical activity intraluminally. OCT findings will be validated using high-resolution ex-vivo lightsheet imaging of the same colonic section with inflammation and neuronal network labelling. Benzalkonium chloride (0.2%, BAC) swabbing in the colon was used to induce localized colonic inflammation and aganglionosis.

Results: OCT data were collected from 36 healthy control animals, 6 animals with acute BAC procedures and 11 followed longitudinally. Our library of healthy control OCT images has helped establish a recognizable "normal" phenotype of gut morphology. Repeated imaging in longitudinal measurements captured the transition from normal to acute BAC-induced injury to a post-injury inflammatory state. Upon observation of 3D OCT scans from distal colon to rectum, localized mucosal thickening and nodularity was found. Colon wall thickness measurements made within predefined regions of interest across all animals showed condition-specific inflammatory features. Furthermore, co-registration across in-vivo OCT acquisitions at multiple time points and ex-vivo lightsheet data was achieved using stable landmarks such as lymphoid follicles.

Conclusions: We present a minimally invasive, multimodal pipeline to assess in-vivo colon morphology and function, with strong inter-modality agreement that supports OCT validity for in-vivo assessment of colonic inflammation. Thus, longitudinal measurements enable acute assessment and tracking of gut status progression over time. With such a tool, a better understanding of the relationship between colonic function and morphology can advance diagnostic strategies and patient care in IBS and other DGBIs.



ABSTRACT CODE: IBS25659-89 - POSTER BOARD NO. 6

Mast Cells are Close to Blood Vessels Characterized by Increased Permeability in the Colonic Mucosa of Patients with Irritable Bowel Syndrome

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Objective: Irritable bowel syndrome (IBS) is a multifactorial gastrointestinal disorder characterized by epithelial and vascular barrier dysfunction and immune abnormalities. Mast cells (MCs), abundantly located in the lamina propria, are key effector cells in mucosal immunity. This study aimed to assess MCs density and their spatial proximity to blood vessels characterized by increased permeability in the colonic mucosa of IBS patients compared with controls.

Methods: Colonic mucosal biopsies from 4 asymptomatic controls (AC) and 21 IBS patients, including 4 diarrhoea-predominant IBS (IBS-D), 8 constipation-predominant IBS (IBS-C), and 9 mixed-predominant IBS (IBS-M) were collected. Immunofluorescence analysis was used to characterize tryptase positive MCs and plasmalemma vesicle associated protein-1 (PV1) positive vessels (i.e. vessels with increased permeability); their counts and spatial proximity ($< 5 \mu\text{m}$) were quantified using ImageJ programme.

Results: All IBS patients showed an increase of MCs compared to AC, particularly we found an increase of 62% in MCs counts in IBS-C subgroup ($p = 0.049$) compared to other groups. PV1+ vessels density was significantly increased in IBS compared to controls. Furthermore, compared to AC, MCs located within $5 \mu\text{m}$ of PV1+ vessels were significantly increased in all IBS subtypes ($p = 0.001$), with increases of 177% in IBS-D ($p = 0.029$), 108% in IBS-C ($p = 0.016$), and 51% in IBS-M ($p = 0.003$).

Conclusions: All IBS patients showed an increased density of MCs and blood vessels with altered permeability. Interestingly, we found that MCs are significantly closer to PV1+ vessels in IBS patients compared to controls, supporting a role for MC mediators in endothelial dysfunction in IBS.

ABSTRACT CODE: IBS25639-87 - POSTER BOARD NO. 7

Novel patients with biallelic variants in LIG3 expand the clinical phenotype associated to mitochondrial DNA depletion syndrome 20, MNGIE type

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Background and Objectives: We recently identified a novel form of severe gut dysmotility with chronic intestinal pseudo-obstruction (CIPO) and leukoencephalopathy, due to mutations in LIG3. This condition is defined mitochondrial DNA (mtDNA) depletion syndrome 20, MNGIE type (MTDPS20). LIG3 encodes for a ligase crucial for mtDNA maintenance. Patients-derived fibroblasts exhibited severely reduced LIG3 expression, causing mtDNA depletion, impaired mitochondrial functions and bioenergetic defects. We collected new patients presenting LIG3 biallelic variants, several of which reported as variants of unknown significance (VUS), therefore we aimed to characterize their impact on LIG3 using in vitro studies.

Methods: Whole genome sequencing (wgs) was performed on total DNA extracted from peripheral blood (2 µg) using the Illumina DNA PCR-Free Prep Tagmentation kit and sequencing on Next2000 machine (Illumina). Fastq files were mapped, annotated and filtered using the software eVai (Engenome). HEK293 cells were grown in DMEM 10%FBS in standard conditions. Cells were transfected via Lipofectamine 3000 with different constructs carrying either wild-type LIG3 cDNA, or the novel missense variants identified, inserted in the cDNA via site-directed mutagenesis, or the empty vector. Protein expression using anti-LIG3 antibody was performed via Western blotting.

Results: The following patients with biallelic variants in LIG3 were identified: a female patient (18 yrs old), with the homozygous change p.G964R, already found as compound heterozygous in one original family (1); a male patient (2 yrs old) with the stop codon p.R267X already reported (1) and the novel missense change p.T927M, defined VUS. One male case (30 yrs old) presented the novel missense variant p.D408N (VUS), and an intragenic LIG3 deletion (4.4Kb), detected via wgs. One female case (3 months old) exhibited the frameshift variant p.A295Glnfs*12 and the already reported missense p.P609L (1). Functional studies of variants p.T927M and p.D408N in transiently-transfected HEK293 cells showed that these variants consistently caused severely reduced protein expression vs. HEK 293 transfected with LIG3 wild-type cDNA.

Conclusion: Our data expand the number of pathogenic LIG3 variants and strengthen the role of absent/severely reduced LIG3 in the molecular mechanism causing MTDPS20.

References: Bonora et al, Brain 2021;144:1451-1466.

ABSTRACT CODE: IBS25671-83 - POSTER BOARD NO. 8

Permeability dysfunction in Irritable Bowel Syndrome (IBS) patients with and without comorbidities: results from an In vitro study of the European multicentre DISCOvERIE project

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Objective: Irritable bowel syndrome (IBS) is a disorder of the gut-brain axis and one of the most common gastrointestinal syndromes characterized by altered bowel habits in association with abdominal discomfort or pain and abnormal defecation patterns. Up to 60-70% of patients with IBS overcome to extra-intestinal comorbidities including anxiety, depression, fibromyalgia, chronic fatigue syndrome and somatization. The aim of this study was to evaluate the effect of mucosal mediators released from IBS patients with and without comorbidities on an in vitro model of intestinal epithelial barrier.

Methods: Thirty healthy controls (HC; 13 F, age-range:24-69), 27 IBS alone (i.e. without comorbidity, 15 F, age-range:31-72), 25 IBS comorbid (with one comorbidity, 21 F, age-range: 25-62) and 19 IBS multi-comorbid patients (with more than one comorbidity, 16 F, age-range:34-64) from different centres involved in a European project (DISCOvERIE n°: 848228). Rome IV criteria, Bowel disease questionnaire, Hospital Anxiety Depression Scale were used to phenotype patients. Mediators spontaneously released by colonic biopsies were collected (SUP). The effect of SUP samples on in vitro model of Caco-2 paracellular permeability was evaluated using sulfonic-acid-conjugated to fluorescein (FITC). qPCR and western blot analysis were performed on mRNA and protein extracted from Caco2 cells and colonic biopsies to assess tight junction (TJ) gene and protein expression.

Results: Compared to HC, the SUP of patients with IBS significantly increase the paracellular permeability after 6 hours of incubation. Furthermore, SUP of comorbid and multicomorbid IBS patients induce a significant increase of permeability compared to SUP from IBS alone ($p<0.005$ and $p<0.05$ respectively). Quantitative analysis on qPCR showed a reduction of the TJs ZO-1 and Occludin in IBS comorbid patients compared to controls ($p=0.011$ and $p=0.030$ respectively), while western blot analysis doesn't reach the statistical significance between the different groups, although a trend was observed.

Conclusion: Taken together these results suggest that epithelial barrier alteration occurs in patients with IBS with and without comorbidities by modulating TJ proteins. This study provides a starting point for future research aimed to characterize the molecular mechanisms underlying permeability dysfunction.

ABSTRACT CODE: IBS25574-85 - POSTER BOARD NO. 9

AI-Assisted Functional Ultrasound of Intestinal Motility for IBS Phenotyping: A Pilot Feasibility Study

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Background / Aims: Irritable bowel syndrome (IBS) lacks objective imaging biomarkers and remains a diagnosis of exclusion. We hypothesized that functional ultrasound (US) with AI-assisted motility analysis can provide quantifiable parameters for IBS phenotyping and differentiation from organic bowel pathology.

Methods: A prospective pilot study (n=10) including patients with suspected functional or organic bowel disorders. All patients underwent standardized functional intestinal ultrasound (FIUS):

- Transabdominal assessment of small bowel and colon (ascending, descending, sigmoid)
- M-mode recordings (≥ 60 seconds per segment)
- Selection of optimal loops (fluid-filled, minimal gas)

Motility was evaluated using a novel Ultrasound Motility Score (UMS) including:

- frequency (waves/min)
- amplitude (mm)
- propagation pattern
- variability

Signal decomposition was applied to distinguish:

- high-frequency cardiac/respiratory artifacts
- low-frequency peristaltic activity (0.03–0.1 Hz)

AI-assisted analysis extracted:

- motility frequency
- amplitude
- variability indices

Results: Functional motility patterns were successfully quantified in all patients, including ICU-like conditions. Distinct phenotypes were identified:

- IBS-like pattern: increased variability, spastic non-propagating contractions
- Inflammatory/systemic pattern: reduced frequency and uniform hypomotility
- Tumor-related pattern: focal aperistalsis with preserved surrounding motility
- Ileus-like pattern: global suppression of low-frequency activity

Use of fluid interfaces (ascites or intraluminal fluid) significantly improved visualization and measurement reliability. The UMS demonstrated feasibility for semi-quantitative classification of motility disorders.

Interpretation: Functional ultrasound combined with AI-based signal analysis enables objective quantification of intestinal motility, overcoming limitations of qualitative assessment.

Separation of true peristalsis from cardiorespiratory artifacts represents a key methodological advancement, allowing reliable evaluation even in challenging clinical settings.

The proposed UMS provides a practical framework for motility phenotyping, analogous to elastography in tissue characterization.

Conclusions: AI-enhanced functional intestinal ultrasound is a feasible and promising tool for IBS diagnosis and differential assessment.

Standardized acquisition and scoring enable:

- objective motility assessment
- differentiation between functional and organic disease
- potential integration into clinical workflows

Further studies are required to validate thresholds and diagnostic accuracy

ABSTRACT CODE: IBS25668-89 - POSTER BOARD NO. 10

AI-driven social listening research on the quality of nutrition information for improving gut health and patient-reported outcomes: A pilot study

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Background: One in four adults without organic gastrointestinal disorders report frequent gastrointestinal (GI) symptoms that affect quality of life¹. While diet is the preferred management tool², little is known about the quality of nutrition information on social media and patients' information needs and perceptions about gut health.

Objective: This study sought to (1) assess the quality of nutrition-related information for improving gut health on Instagram and (2) identify frequently patient-reported outcomes (PROs)..

Methods: In Spanish we searched Instagram the terms "abdominal pain", "bloating", "distension", "constipation", "diarrhea" and "heartburn" on March 2026 and downloaded 229 posts. After excluding videos or images without text, posts without nutrition claim related to gut health or commercially oriented content, 97 posts were included. We examined nutrition information quality according to 14 predefined criteria (score range, 0-14, with higher values indicating better reporting quality)³. Subsequently, we screened 10,148 user-generated comments from the Instagram posts with higher engagement rate and included 2,308 for analysis. An AI-aggregation tool (Instagram Comments Scraper) was used to search Instagram posts and extract PROs.

Results: Out of 97 Instagram posts analyzed, 63.9% (n=62) recommended at least one diet intervention. GI symptoms most frequently associated with nutritional advice were constipation (31.7%) and bloating (31.2%). The most frequently reported diet interventions were fruits (14.5%) and dietary fiber (9.7%) for constipation and species and aromatic herbs (8.1%) for bloating. On a scale of 0-14, the median information quality score for all posts was 4. Only one Instagram post included the link to a scientific publication, 2 quantified the effects, and 28 reported potential harms. A total of 78 unique PROs emerged. Content analysis of these indicated the most commonly mentioned symptoms were bloating (35.8%), flatulence (23.0%), halitosis (15.4%), abdominal pain/cramps (10.3%), constipation (9.0%) and fatigue (7.7%). Food items with fermentable carbohydrates (i.e., wheat-based products, garlic, onion, leeks and sweeteners) were frequently associated with bloating and diarrhea.

Conclusions: Most basic standards for high-quality nutrition information were not met by most Instagram posts. Patients most often seek information about dietary changes and bloating was the outcome that worried them the most.

ABSTRACT CODE: IBS25599-92 - POSTER BOARD NO. 11

Beyond referrals: Reclaiming conceptual biopsychosocial integration in neurogastroenterology

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Objective: The biopsychosocial model is widely endorsed across neurogastroenterology, and important advances have been made in multidisciplinary care for patients with Disorders of Gut-Brain Interaction (DGBI). Yet, opportunities remain for developing how psychosocial dimensions are integrated, not only structurally through referral pathways, but conceptually, within clinical reasoning and research design. This review and commentary explores how the field might move toward greater biopsychosocial integration, building on its existing strengths.

Methods: This communication presents a conceptual analysis drawing on philosophy of medicine, clinical and health psychology, and the neurogastroenterology literature. A framework distinguishing three forms of integration is proposed: conceptual (incorporating biological, psychological, and social reasoning within one's own clinical and scientific practice), procedural (coordinating specialists around a patient), and delegated (relying on referral to address psychosocial dimensions). Current neurogastroenterology practice, research conventions, and educational structures are examined through this framework, alongside consideration of how established health-psychology frameworks may complement and add to the field's existing approaches.

Results: Opportunities for enhanced integration were identified in several areas. Psychological constructs frequently used in gastroenterology research (e.g., anxiety, catastrophising, somatisation) carry disciplinary nuances that, when overlooked, may limit the precision of study findings and risk unintended stigmatisation. Well-established health-psychology frameworks, including the Common-Sense Model and fear-avoidance models, offer empirically supported tools for operationalising the "psychological" within the biopsychosocial model, yet remain unconsidered in gastroenterology overall. A genuinely integrated and conceptual consideration of the biopsychosocial model, one in which psychological and social dimensions inform clinical reasoning from the outset, rather than being delegated after biomedical options are exhausted, will be suggested. Examples of how such integration can be achieved in clinical practice, research design, and medical training will be discussed.

Conclusions: Neurogastroenterology has made meaningful progress in recognising the relevance of psychosocial factors. This review-commentary suggests that the next step involves cultivating conceptual biopsychosocial literacy and practice, the capacity to reason across dimensions within each discipline, alongside structural adjustments such as interdisciplinary collaboration from the earliest stages of research design and the integration of psychological reasoning throughout medical education and training.

ABSTRACT CODE: IBS25661-82 - POSTER BOARD NO. 12

Can Anorectal Manometry Be Simplified Without Compromising RP Accuracy?

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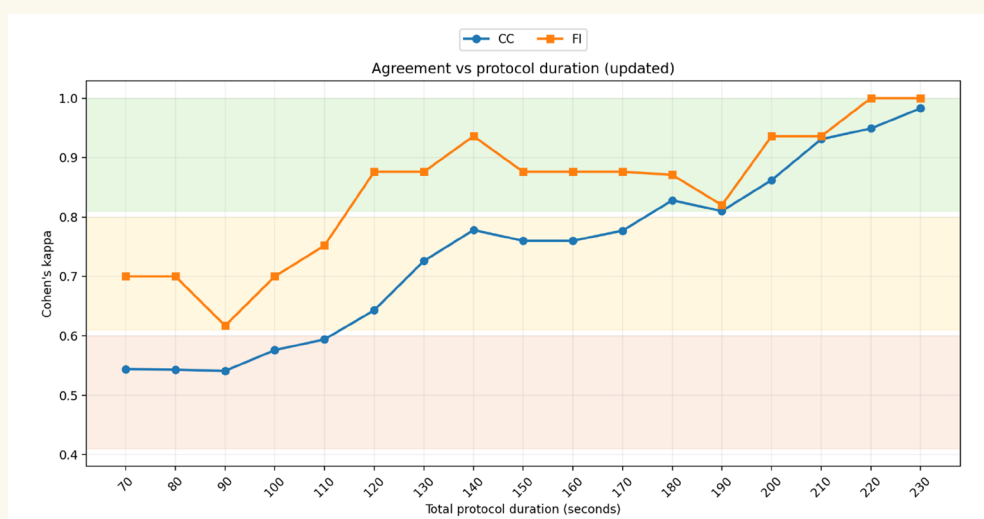
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Aim: Anorectal manometry (ARM) is a diagnostic technique used to identify anorectal disorders. The London Protocol, approved by the International Anorectal Physiology Working Group (IAPWG), provides a standardized approach to the performance and interpretation of anorectal manometry and includes measurement of anal resting pressure (RP) over 60 seconds after a 3-minute stabilization period (SP) following catheter insertion. The aim of the present study was to assess the diagnostic accuracy of different modified ARM protocols, in comparison with the recommendations of the London Protocol.

Methods: high-definition ARM (HD-ARM) traces from patients with CC and FI who had undergone HD-ARM according to the London Protocol we analyzed. For each tracing, the area of interest was manually re-evaluated by modifying the RP recording (60, 50, 40, 30, 20, and 10 seconds) and the SP (3, 2, and 1 minute). This approach generated 17 additional manometric metrics, which led to new diagnoses that were subsequently compared with those obtained using the standard London Protocol.

Results: We enrolled 88 patients with CC and 34 with FI (97 F, mean age 54.7±17.0 years). Mean anal RP was significantly lower in FI than in CC patients (50.6±25.2 vs 74.9±20.3 mmHg, $p<0.001$). Anal hypotension was more prevalent in FI, whereas normotonia or hypertonia was more common in CC ($p=0.002$). The repeated-measures ANOVA revealed significant differences between protocols in both groups ($p<0.001$). Moreover, it was discovered that moderate shortening of the protocol had a small impact on mean RP values, compared to more aggressive reductions, especially with a SP 1-min, which influenced RP values when compared with the RP values of the London protocol. This change in concordance is more evident in CC patients than in FI patients (Fig1). Overall, the shortest simplified protocol that preserved diagnostic agreement with the London protocol in both groups was 180 seconds, corresponding to 2 minutes of stabilization period and 60 seconds of resting pressure recording.

Conclusion: Reducing the stabilization period to 2 minutes, followed by 60 seconds of resting pressure recording, preserves the diagnostic reliability of HD-ARM.



ABSTRACT CODE: IBS25584-86 - POSTER BOARD NO. 13

Characterizing Somatic Hyperalgesia in patients with Irritable Bowel Syndrome

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Introduction: Irritable bowel syndrome (IBS) is a highly prevalent condition. Beyond gastrointestinal motility disturbances and psychological factors, patients may exhibit visceral hypersensitivity, characterized by increased symptom perception and lower pain thresholds. The frequent association with extra-intestinal symptoms (e.g., low back pain, migraine, dyspareunia) and fibromyalgia supports the presence of central hyperalgesic mechanisms and a state of generalized hypersensitivity. **Aim:** To assess somatic hyperalgesia in IBS patients in response to cutaneous thermal nociceptive stimuli.

Methods: Patients with IBS, diagnosed according to Rome IV criteria and without significant comorbidities (diabetes, prior abdominal surgery, inflammatory bowel disease, or celiac disease), were prospectively included along with healthy controls. Pain sensitivity was assessed using thermal contact stimuli applied to the forearm, leg, and left hypochondrium. Both cold and heat stimuli were delivered using a TSA-II Neurosensory Analyzer, with a baseline temperature of 32°C. Heat pain threshold was specifically evaluated on the forearm (baseline 40°C) using incremental pulses of 0.8°C until participants reported maximal tolerable pain (defined as 100% on a visual analog scale). Statistical analysis was performed using Student's t-test and χ^2 test.

Results: A total of 24 female patients with IBS (mean age 43 years, range 26–72), and 19 healthy controls (mean age 38 years, range 25–54; 13 females, 6 males) were included. No significant age differences were observed between patients and controls. Across all three stimulation sites, patients exhibited increased sensitivity to cold, with higher temperature detection thresholds ($29.55 \pm 0.47^\circ\text{C}$ vs. $27.79 \pm 0.32^\circ\text{C}$ in controls; $p < 0.001$). Similar findings were observed for heat stimuli, with mean thresholds of $35.05 \pm 0.38^\circ\text{C}$ in patients versus $37.61 \pm 0.67^\circ\text{C}$ in controls ($p < 0.001$). Additionally, 52% (10/19) of controls tolerated temperatures above 50°C, compared to only 4.3% (1/23) of IBS patients.

Conclusion: IBS patients demonstrate increased cutaneous somatic sensitivity, characterized by earlier perception of both cold and heat stimuli. They also exhibit reduced pain tolerance. These findings support the presence of a generalized hypersensitivity state in IBS, likely related to underlying central mechanisms involved in disease pathophysiology.

ABSTRACT CODE: IBS25634-82 - POSTER BOARD NO. 14

Dietary changes and longer-term symptom improvement in IBS: a secondary analysis of the CARIBS randomized controlled trial

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Objective: Although dietary intake is recognised as a trigger for symptoms in people with irritable bowel syndrome (IBS), effective treatments across all patients and subtypes remain limited. The CARIBS trial (Nybacka et al LGH 2024) compared two dietary interventions and found analogous improvements. Considering both diets reduced symptoms, this study aimed to explore which changes were associated with longer-term symptom improvement.

Methods: The CARIBS trial was a single-blinded parallel-arm randomized controlled trial in which adults with IBS (Rome IV, IBS-SSS $\geq$ 175) were randomly assigned to either follow a low FODMAP diet combined with traditional IBS dietary advice (LFTD), or a low carbohydrate diet (10%E from carbohydrates, LCD). IBS symptom severity was measured using the IBS-SSS; dietary intake from 4-day food diaries. Data were collected at baseline and 6 months post-intervention. Analyses included paired t-tests for within-group changes in responders (IBS-SSS $\geq$ 50 reduction) and non-responders, and linear regression with percentage (%) change in IBS-SSS as the dependent variable, adjusted for baseline IBS-SSS, age, sex, and intervention. Mean change, unstandardised B and 95% CI, and p values are presented.

Results: Responders from both groups (LFTD n = 67, LCD n = 64) increased nuts and seeds (LFTD p = 0.03; LCD p = 0.002). LFTD responders reduced high FODMAP foods (-27.0 g/day, p < 0.001) and increased gluten-free foods (+71 g/day, p < 0.001); LCD responders increased high FODMAP vegetables (+16.9 g/day, p = 0.01). Responders across both interventions reduced carbohydrate (-3.3%E, p = 0.005), and increased protein (+2.0%E, p = 0.002). Non-responders (LFTD n = 31, LCD n = 41) maintained FODMAP intake but reduced high lactose foods (p = 0.005). In regression analyses, bread (-0.121 [-0.193, -0.048], p = 0.001), dairy (p = 0.011), cereal (p = 0.003), and high FODMAP foods (-0.111 [-0.181, -0.040], p = 0.002) were inversely associated with % change in IBS-SSS.

Conclusions: Dietary changes were linked to symptom reduction, with differences between responders and non-responders. Reduced intake of several food groups were associated with symptom improvement. These findings suggest potential dietary targets for long-term management, although further research is needed to confirm and characterize these relationships.

ABSTRACT CODE: IBS25655-85 - POSTER BOARD NO. 15

Differentiating therapeutic responses in Rome IV functional constipation and irritable bowel syndrome with predominant constipation diagnosed in a secondary care center in the UK

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Objectives: Clinical trials have demonstrated the efficacy of osmotic and stimulant laxatives, as well as prucalopride and linaclotide, in treating chronic constipation. However, some medications have only been evaluated specifically for functional constipation (FC) or irritable bowel syndrome with constipation (IBS-C) and their real-world effectiveness remains unclear. This audit aimed to evaluate which pharmacological interventions are effective in patients diagnosed with Rome IV FC and IBS-C in a secondary care clinical practice within the UK.

Methods: Demographic data and patient reported outcomes were retrospectively reviewed for patients diagnosed with Rome IV FC and IBS-C between January 2016 and May 2026 at a single UK neurogastroenterology clinic. The analysis included only patients with documented follow-up until a patient-reported satisfactory treatment was achieved. Results are presented as mean $\pm$ standard deviation (SD) or as frequency (%) and were analysed using Chi-squared or Fisher's exact test.

Results: Two hundred and thirty-six patients were enrolled (FC n=66; IBS-C n=170). IBS-C were older (50 ± 16.7 vs 48 ± 18.5 years; $p=0.044$) and more frequently females (82.94% vs 71.21%; $p=0.045$). Duration of symptoms at first consultation was longer in FC than IBS-C (17 ± 16 vs 14 ± 16.6 years; $p=0.02$), with no difference in the duration of follow-up (IBS-C = 33 ± 24 vs FC = 40 ± 28.3 months; $p=0.08$). FC reported more frequently treatment satisfaction during follow-up (77% vs 59.8%; $p=0.024$), with the use of a combination of stimulant and prokinetic laxative and of trans anal irrigation (TAI) alone or in combination with laxative (Table 1). Successful management of IBS-C included the use of a combination of osmotic or stimulant laxatives or prokinetic with a neuromodulator, or monotherapy (either dietary changes, linaclotide or neuromodulators alone) (Table 1).

Conclusion: This study suggests that FC is more likely to respond to treatment stimulating motility (stimulant laxatives, prokinetics, TAI), whereas IBS-C responds better to treatment that also targets visceral hypersensitivity.

	IBS-C (n=70)	FC (n=44)	P value
Osmotic or stimulant laxative or prokinetic, n (%)	14 (20)	6 (13.6)	0.25
+ Neuromodulator, n (%)	5 (7.1)	0 (0)	0.07
Stimulant and prokinetic laxative, n (%)	6 (8.5)	8 (18.1)	0.04
+ Neuromodulator, n (%)	4 (5.7)	0 (0)	0.14
Osmotic and prokinetic, n (%)	4 (5.7)	1 (2.2)	0.28
+ Neuromodulator, n (%)	3 (4.2)	0 (0)	0.27
TAI, n (%)	2 (2.8)	6 (13.6)	0.003
+ Neuromodulator, n (%)	1 (1.4)	0 (0)	1
TAI + osmotic and stimulant laxatives, n (%)	9 (12.8)	11 (25)	0.02
+ Neuromodulator, n (%)	4 (5.7)	0 (0)	0.14
Linaclotide, n (%)	9 (12.8)	0 (0)	0.002
+ Neuromodulator, n (%)	3 (4.2)	0 (0)	0.27
Neuromodulator, n (%)	7 (10)	0 (0)	0.01
Other combinations, n (%)	2 (2.8)	7 (15.9)	0.001
Dietary changes, n (%)	12 (17.1)	0 (0)	<0.001

Table 1. Therapeutic regimens in responders with IBS-C and FC

ABSTRACT CODE: IBS25680-83 - POSTER BOARD NO. 16

Effectiveness of Yoga for Irritable Bowel Syndrome: A Systematic Review

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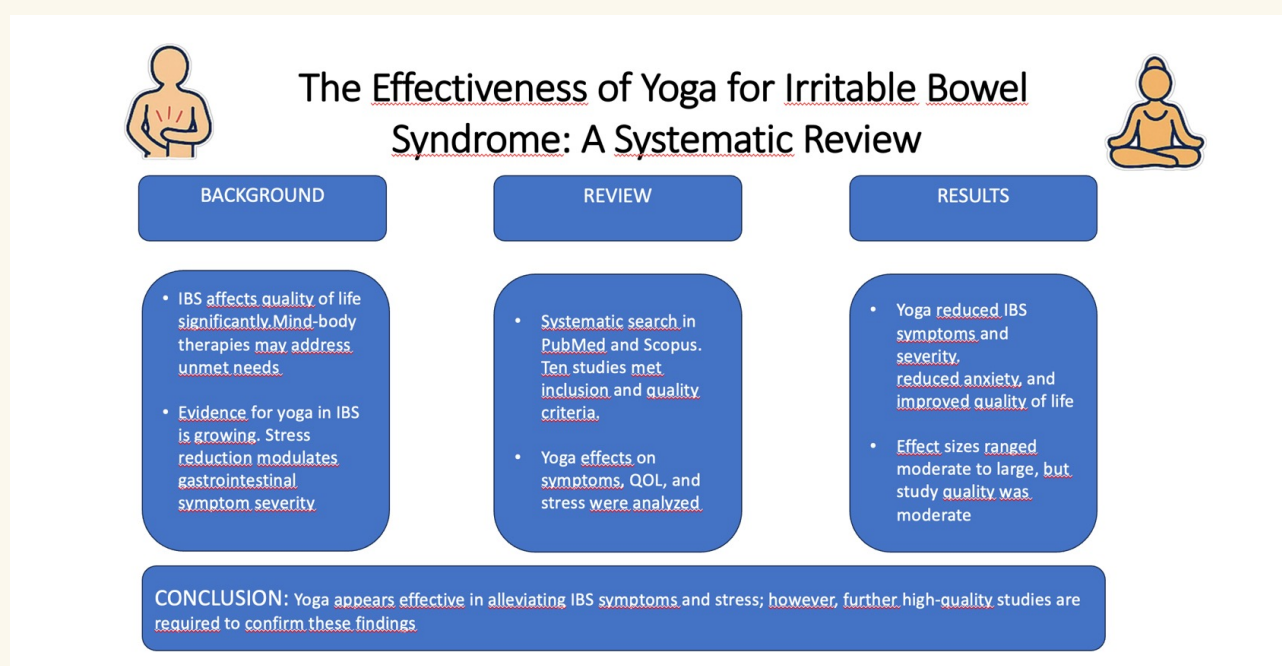
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Background: Irritable Bowel Syndrome (IBS) is a common functional gastrointestinal disorder affecting 5%-10% of the global population and is characterized by recurrent abdominal pain and dysregulation of bowel movements. Many patients do not benefit from full remission of symptoms by conventional treatments. Recently, yoga has demonstrated its potential benefits in various medical conditions including IBS, as a result of its effect on the gut- brain axis. This systematic review evaluates the effectiveness of yoga for the management of IBS.

Methods: We conducted a comprehensive literature search in PubMed and Scopus until March 2025 to identify studies on yogic posture, pranayama, and meditation in IBS. After excluding reviews, case reports, and studies not meeting age or design criteria, 10 studies were included. These were evaluated for methodological quality and classified as randomized controlled trials (RCTs) or non controlled trials. We analyzed outcomes related to gastrointestinal symptoms, quality of life, and psychological symptoms and examined the type of yoga administered.

Results: Yoga interventions led to amelioration of gastrointestinal symptoms, decreased anxiety and depression, and enhanced quality of life compared to usual care or wait- list controls. Of note, the studies that fixed the change in the IBS Symptom Severit Scale scores as the primary outcome showed a moderate-large effect of yoga on the improvement of symptoms compared to controls (Cohen's d range: 0.37-3.60).

Conclusion: These preliminary findings suggest that yoga could favorably influence both the physical and psychological aspects of IBS. However, high quality larger sample studies are needed to confirm the findings reported in the review.



ABSTRACT CODE: IBS25656-86 - POSTER BOARD NO. 18

Factors associated with food-related quality of life in irritable bowel syndrome

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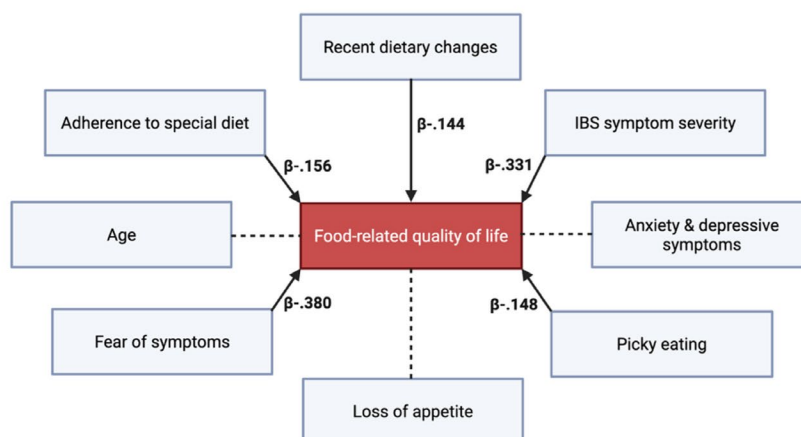
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Introduction: Food plays a central role in symptom generation in irritable bowel syndrome (IBS) and may negatively affect food-related quality of life (FRQoL). FRQoL measures the impact of diet, eating behaviours, and food-related anxiety on a person's quality of life. Factors influencing FRQoL in IBS are not well understood. The aim of this study was to explore disordered eating-related predictors of FRQoL in patients with IBS.

Method: Mention study design in first sentence. Patients with IBS and non-IBS controls were recruited for a study on food-related expectations. Participants completed questionnaires assessing demographics, FRQoL, self-reported adherence to a special diet, and recent dietary changes in the last 12 months, and the following avoidant/restrictive eating disorder (ARFID) subscales (Nine-Item ARFID screen (NIAS)): picky eating, loss of appetite, and fear of symptoms. ARFID symptoms were defined as meeting cutoffs for any of the NIAS subscales. Furthermore, IBS symptom severity (IBS-SSS), and symptoms of anxiety and depression (HADS) was assessed. Group comparisons were performed using independent t-tests. Hierarchical linear regression was used to identify predictors of FRQoL. Variables were entered sequentially: (1) Age, adherence to special diet, change of diet, (2) IBS symptom severity, (3) anxiety and depressive symptoms, and (4) NIAS subscales.

Results: A total of 135 patients with IBS (94.8% female, 43.8 ± 14.7 years) and 155 non-IBS controls (71.9% female, 39.6 ± 14.4 years) were included. FRQoL was lower in IBS compared to controls (67.1 ± 21.2 vs. 127.3 ± 10.4 , $p < .001$). IBS patients with ARFID symptoms had lower FRQoL than those without (59.5 ± 18.9 vs. 77.4 ± 19.9 , $p < .001$). After regression analysis, the final model explained 57.5% of the variance of FRQoL ($R^2 = .575$, Adjusted $R^2 = .547$, $p < .001$). Fear of symptoms emerged as the strongest independent factor ($\beta = -.380$, $p < .001$), followed by IBS symptom severity ($\beta = -.331$, $p < .001$) (Figure).

Conclusion: Food-related QoL is markedly reduced in IBS and related to diet behaviours, severity of IBS, and in particular fear of symptoms. Symptom-related fear may represent a modifiable target to improve food-related QoL in IBS.



Hierarchical Linear Regression for predictors of food-related quality of life in patients with irritable bowel syndrome (IBS). Significant variables shown with arrow and bold beta

ABSTRACT CODE: IBS25607-82 - POSTER BOARD NO. 19

Food triggers and food avoidance in functional bowel disorders: the role of avoidant/restrictive food intake disorder (ARFID) symptom dimensions

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Introduction: Dietary restriction due to food-related symptoms is common in functional bowel disorders (FBD). However, severe and prolonged restriction may lead to meeting criteria for avoidant/restrictive food intake disorder (ARFID). Although ARFID symptoms are frequently reported in FBD, the specific trigger foods and underlying motivations remain unclear. We therefore examined food triggers and motivations for food avoidance in individuals with FBD with versus without ARFID symptoms.

Method: An online health survey was conducted in a Swedish general population sample reporting at least one bowel symptom used to diagnose FBD according to the ROME IV criteria. Only individuals fulfilling the diagnostic criteria for any FBD were included in this analysis. ARFID symptoms were defined using cutoffs of the Nine Item ARFID screen (NIAS), covering picky eating, loss of appetite, and fear of symptoms. Subscale scores were calculated for each domain. Bowel symptom severity (IBS-SSS), psychological distress (PHQ4), and a brief food frequency questionnaire assessing food-related symptoms and whether specific food items are perceived to trigger gastrointestinal symptoms (in-house questionnaire) were assessed. Group comparisons used chi-square tests, independent t-tests, and regression analyses adjusted for age and sex.

Results: Among 535 individuals with FBD (37.8±14.7 years, 70.8% female), 23% (n=123) reported ARFID symptoms. These individuals more often reported food-related symptoms (48.8% vs 34.0%, p=.009) and a higher number of trigger foods (8.4±8.2 vs. 5.6±7.1, p<.001). In mutually adjusted analysis, only fear of symptoms was associated with food-related symptoms (OR=1.33, 95%CI [1.24,1.44]) and number of trigger foods (β =1.04, 95%CI [.84, 1.23]). Loss of appetite showed a weak negative association with food-related symptoms (OR=.93, 95%CI [.87, 1.00]), and picky eating was not associated. These findings remained after adjustment for psychological distress and bowel symptom severity (Table).

Conclusion: ARFID symptoms in FBD are linked to more food-related symptoms and trigger foods. Fear of symptoms appears to be the key ARFID-related dimension, suggesting that symptom-related hypervigilance may drive avoidant eating patterns in FBD

	Food triggers			Food related symptoms	
	β (95% CI)	Standardized β	p-value	Odds ratio (95% CI)	p-value
Picky eating (NIAS)	0.019 (-0.145, 0.182)	0.01	.821	0.98 (0.92, 1.05)	.556
Loss of appetite (NIAS)	-0.172 (-0.350, 0.005)	-0.09	.057	0.92 (0.86, 0.99)	.029
Fear of symptoms (NIAS)	0.756 (0.562, 0.951)	0.35	<.001	1.25 (1.15, 1.35)	<.001
Age (years)	-0.021 (-0.060, 0.017)	-0.04	.281	0.98 (0.96, 0.99)	.006
Sex (male=1, female=2)	0.863 (-0.379, 2.104)	0.05	.173	0.89 (0.54, 1.47)	.658
Psychological distress (PHQ4)	0.031 (-0.137, 0.199)	0.01	.717	1.06 (1.00, 1.13)	.067
Bowel symptom severity (IBS-SSS)	0.021 (0.015, 0.026)	0.31	<.001	1.01 (1.00, 1.01)	<.001

Table: Regression analysis on avoidant/restrictive eating disorder (ARFID) dimensions and food-related symptoms and trigger foods, after adjustment for covariates

ABSTRACT CODE: IBS25657-87 - POSTER BOARD NO. 20

High IgA anti-transglutaminase titers are linked to systemic inflammation and unfavorable lipid pattern in Celiac Disease

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Aims/Purpose: Emerging evidence suggests a potential link between intestinal autoimmunity, systemic inflammation, and atherogenic lipid pattern in celiac disease (CD). This study investigated the associations between IgA-anti-transglutaminase (TTG) titers, indices of lipid metabolism and inflammatory markers.

Methods: A total of 113 blood samples obtained from 50 CD patients were analyzed. We excluded subjects with known dyslipidemia, those taking statins, and women using hormone replacement therapy to avoid confounding effects on lipid metabolism. A multivariate REML-correlation model was used to assess the relationship among TTG-levels, lipid parameters (LDL, HDL, triglycerides, triglyceride/HDL-ratio, Atherogenic-Index-of-Plasma [AIP:log10(triglycerides/HDL ratio)], LDL/HDL-ratio), and inflammatory markers (white-blood-cells [WBCs], neutrophil-count).

Results: Higher TTG-titers were significantly associated with lower HDL ($r: -0.289$; $p: 0.002$) and higher atherogenic indices, including triglyceride/HDL ratio ($r: 0.2667$; $p: 0.004$), AIP ($r: 0.230$; $p: 0.015$), and LDL/HDL ratio ($r: 0.200$; $p: 0.0334$). TTG also correlated with elevated WBCs ($r: 0.220$; $p: 0.023$) and neutrophils ($r: 0.283$; $p: 0.003$). Inflammatory markers showed moderate associations with altered lipid metabolism: WBCs correlated with triglyceride levels ($r: 0.201$; $p: 0.037$), triglyceride/HDL ratio ($r: 0.227$; $p: 0.018$), and AIP ($r: 0.282$; $p: 0.003$), while neutrophils were inversely related to HDL values ($r: -0.199$; $p: 0.038$) and positively to AIP ($r: 0.236$; $p: 0.014$) and triglyceride/HDL-ratio ($r: 0.250$; $p: 0.009$).

Conclusion: According to our findings higher TTG titers are linked to both systemic inflammation and a negative lipid pattern characterized by reduced HDL and increased atherogenic indices, such as AIP. The correlation among TTG levels, WBCs, neutrophils, and lipid markers suggests an immuno-metabolic interaction that might contribute to cardiometabolic risk in active CD and deserves further investigation.

ABSTRACT CODE: IBS25632-80 - POSTER BOARD NO. 21

How Anxiety and Depression Alter Esophageal Motility and Reflux Parameters – A Retrospective Study Using Esophageal High Resolution Impedance Manometry and 24-Hour pH Monitoring

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Background: Psychological disorders, particularly anxiety and depression, are increasingly recognized as contributors to gastrointestinal dysfunction, yet their specific effects on esophageal motility remain understudied. This study aimed to investigate the correlation between anxiety/depression and objective metrics from high-resolution impedance manometry (HRIM) and 24-hour pH-impedance monitoring, addressing a critical gap in the gut-brain axis literature.

Methods: We retrospectively analyzed 202 patients who underwent HRIM and pH-impedance studies (Jan 2024–Jan 2026). The Hospital Anxiety and Depression Scale (HADS) was used as a tool to assess anxiety and depression. HRIM metrics included Upper Esophageal Sphincter (UES) and Lower Esophageal Sphincter (LES) resting pressure, Peristalsis Breaks (PBs), Distal Latency (DL), % of fragmented swallows, % of hyper-contractile swallows, % of ineffective swallows, % of premature contractions, median Integrated Relaxation Pressure (IRP) and Distal Contractile Integrity (DCI) (10 swallows), median IRP and DCI (Multiple Rapid Swallows (MRS), distal baseline impedance, and % of complete transit. PH-impedance metrics were Acid Exposure Time (AET), number of total refluxes, and Mean Nocturnal Baseline Impedance (MNBI). Univariate and multivariate analyses were performed to explore the relationship between psychological variables and these metrics.

Results: Of the cohort, 55% had anxiety (HADS-A ≥ 8) and 39% had depression (HADS-D ≥ 8). Females exhibited higher anxiety prevalence (38.1% vs. 16.8% males), and higher depression scores compared to males ($p=0.01$, $p=0.03$ for moderate and severe depression respectively). Anxiety significantly correlated with fragmented swallows ($\beta=0.279$, $p<0.001$) and higher AET ($\beta=0.205$, $p=0.049$). Depression was associated with fragmented swallows ($\beta=0.209$, $p=0.004$) and reduced DCI ($\beta=-0.16$, $p=0.048$).

Conclusions: Anxiety and depression are strongly linked to esophageal dysmotility, evidenced by fragmented swallows and altered acid exposure. These findings underscore the need for integrated psychological assessment in managing esophageal disorders. Our study is the first to demonstrate these associations using HRIM and pH metrics, highlighting the gut-brain axis's role in esophageal function, and advocating for targeted mental health interventions to improve outcomes in motility disorders.

HRIM Metrics	UNIVARIATE ANALYSIS							
	ANXIETY				DEPRESSION			
	F	R ² adj	AR ²	P value	F	R ² adj	AR ²	P value
UES RP	0.777	-0.001	0.004	0.379	0.025	-0.005	0	0.874
LES RP	1.594	-0.002	0.007	0.239	1.507	0.002	0.006	0.254
PBs	2.899	0.009	0.014	0.09	1.245	0.001	0.006	0.266
DL	1.209	0.001	0.006	0.273	1.513	0.003	0.008	0.22
% of Fragmented Swallows	18.548	0.08	0.085	< 0.001	11.236	0.048	0.053	0.001
% of Premature Contractions	1.919	0.005	0.01	0.168	0.21	-0.004	0.001	0.647
% of Hypercontractile swallows	0.094	0.005	0	0.76	2.153	0.006	0.011	0.144
% of Ineffective swallows	1.922	0.005	0.01	0.167	0.727	-0.001	0.004	0.395
Median IRP (10 swallows)	2.421	0.007	0.012	0.121	1.111	0.001	0.006	0.293
Median IRP (MRS)	1.721	0.004	0.009	0.191	0.98	0	0.005	0.323
Median DCI (10 swallows)	1.192	0.001	0.006	0.276	3.886	-0.014	0.019	0.05
Median DCI (MRS)	0.832	0.001	0.004	0.363	1.93	0.005	0.01	0.166
Baseline Distal Impedance	0	-0.005	0	0.995	1.372	0.002	0.007	0.243
% of Transit Complete	0.014	-0.005	0	0.905	0.563	-0.002	0.003	0.454
24-hr pH-impedance metrics								
AET	4.345	0.018	0.023	0.038	0.232	-0.004	0.001	0.63
Number of Total Refluxes	0.361	-0.003	0.002	0.549	1.358	0.002	0.007	0.245
MNBI	0.297	-0.006	0.003	0.587	0.316	-0.006	0.003	0.575

Table 1. Univariate Analysis of High-Resolution Impedance Manometry and Reflux Metrics in Relation to Anxiety and Depression

ABSTRACT CODE: IBS25678-90 - POSTER BOARD NO. 22

Is IBS a Food Allergy? Confocal Laser Endomicroscopy Findings in Patients with IBS: A Narrative Review

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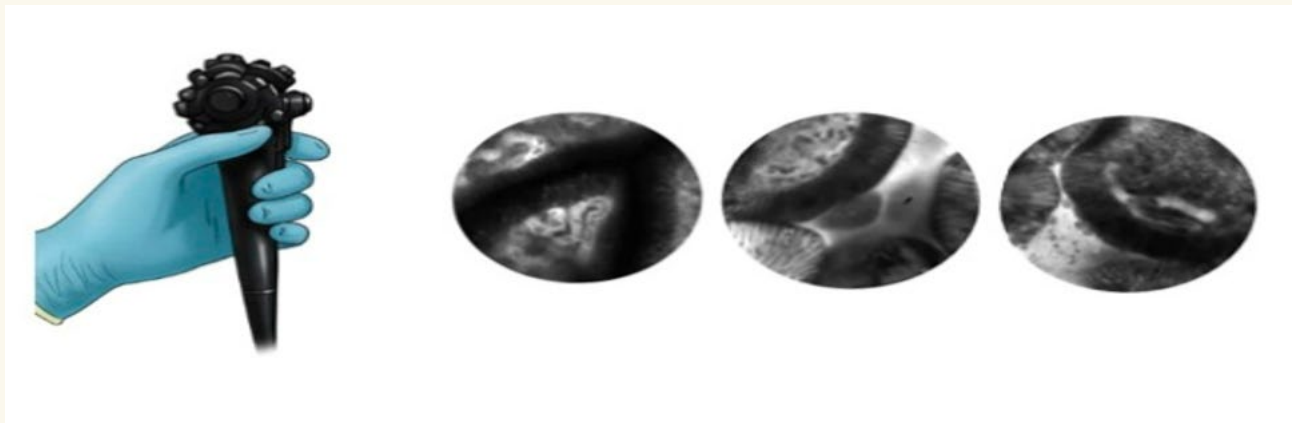
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Objective: Irritable bowel syndrome (IBS) is a gut-brain interaction disorder often associated with food-related triggers, yet the efficacy of common exclusion diets remains debated.

Methods: A PubMed-based narrative review of English-language studies and abstracts published up to January 2025 was performed. Of 128 identified records, 74 articles were included overall, while 11 key studies/abstracts on CLE findings in IBS were synthesized.

Results: Confocal laser endomicroscopy (CLE) offers real-time, high-resolution imaging of intestinal mucosal changes, allowing the visualization of food-induced barrier dysfunction. Early evidence indicates that a substantial subset of IBS patients exhibit acute mucosal reactions to specific foods, characterized by barrier disruption and inflammatory changes, including fluorescein leakage and cell shedding on CLE, with over 70% showing symptom improvements after tailored exclusion diets.

Conclusion: These findings suggest that localized immune responses and barrier defects may contribute to IBS symptoms beyond IgE-driven immunologic mechanisms. However, most CLE-based studies are small, unblinded, and heterogeneous, limiting definitive conclusions. Further research is needed to validate the diagnostic accuracy of CLE, refine protocols, and clarify how best to integrate CLE into personalized dietary management for difficult-to-treat IBS.



ABSTRACT CODE: IBS25611-77 - POSTER BOARD NO. 23

Methodology of the GIANT Study: A Multicentre, Randomized, Double Blind, Parallel Group, Placebo Controlled Trial Assessing Gelsectan® in Patients with Diarrhoea Predominant Irritable Bowel Syndrome

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The GIANT study is a multicentre, randomized, double blind, parallel group, placebo controlled interventional trial designed to assess the efficacy and safety of Gelsectan® in adult patients with diarrhoea predominant Irritable Bowel Syndrome (IBS D).

330 participants are enrolled across eleven European centers (Italy, France, Spain, Belgium). Eligible subjects are adults meeting ROME IV diagnostic criteria for IBS D that are randomized in a 1:1 ratio to receive either Gelsectan® or placebo.

The investigational products are administered orally over an eight week treatment period with a structured dosing regimen: two capsules twice daily before breakfast and dinner during the first four weeks, followed by one capsule twice daily for the subsequent four weeks.

The primary objective of the study is to evaluate the effect of Gelsectan® using a composite responder endpoint based on improvements in abdominal pain and stool consistency over the 8 week treatment period.

Clinical outcomes include standardized measures of IBS D symptom severity (IBS-SSS), gastrointestinal function, IBS Global Assessment of Improvement (IBS-GAI), patient reported quality of life indices (WHOQOL-BREF) and symptoms of depression, anxiety and somatization as measured by the Patient Health Questionnaire (PHQ 9).

Further assessments include the use of rescue therapy, incidence of visits to General Practitioners (GP), Emergency Room (ER) visits, and unplanned hospitalizations with length of stay.

Safety endpoints comprise vital signs, physical examination, safety laboratory evaluations, and the incidence and type of all Adverse Events (AEs) and Device Deficiencies (DDs).

This rigorous study design aims to determine whether Gelsectan®, a medical device with mucoprotective and antioxidant properties targeting the intestinal mucosa, provides clinically meaningful improvements in global IBS D symptoms compared with placebo. The findings are expected to inform evidence based therapeutic strategies and address the substantial unmet needs in IBS D management.

ABSTRACT CODE: IBS25622-79 - POSTER BOARD NO. 24

Overlap of irritable bowel syndrome symptoms and *Yersinia enterocolitica* infection

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Introduction: Irritable bowel syndrome (IBS) is defined by recurrent abdominal pain or discomfort associated with changes in bowel behavior. Changes in the character of the pain, such as continuous pain, may indicate another functional disorder (centrally mediated abdominal pain syndrome), or even other organic causes of pain, including infectious agents.

Method and material: The patient was a 28-year-old female hospitalized due to continuous abdominal pain, lasting for one month, accompanied by diarrhea occurring 2-3 times daily. The patient also reported intermittent abdominal pain occurring 4-5 times per month for a period of several years, associated with alternating diarrhea and constipation. Laboratory workup was performed including microbiological stool analysis, fecal calprotectin, celiac disease serology, and abdominal ultrasound. All findings were found to be normal and based on the positive fulfilment of the Rome criteria, a diagnosis of IBS was established.

Results: As the character of the pain changed over time, accompanied by loose stools, the patient was hospitalized for further treatment. The epidemiological history was negative. The laboratory findings and abdominal ultrasound findings were normal, whereas the MSCT of the abdomen revealed wall thickening of the ascending colon and terminal ileum with enlarged ileocecal lymph nodes. In a multiplex PCR test for gastrointestinal infections, *Yersinia enterocolitica* was isolated and ceftriaxone therapy was initiated. After only a few days, there was significant improvement in her general condition, the patient is pain-free and has regular stools. MR enterography was subsequently performed, which showed normal findings of the small and large intestine. In addition, colonoscopy with retrograde ileoscopy was performed: resulting in normal findings of the colonic mucosa and terminal ileum with multiple folds of the sigmoid colon and dolichosigmoid colon. The biopsies of the terminal ileum and colon were unremarkable.

Conclusion: According to the Rome V criteria, the presence of persistent abdominal pain or discomfort excludes IBS and requires further workup, as was done in this case, where an infectious agent was identified as the cause of the aforementioned symptoms. *Yersinia enterocolitica* was isolated, a gram-negative, rod-shaped bacterium, which most commonly manifests clinically as enterocolitis, i.e. with abdominal pain and diarrhea.

ABSTRACT CODE: IBS25351-78 - POSTER BOARD NO. 25

Overuse systemic antibiotic therapy in chronic obstructive pulmonary disease and irritable bowel syndrome-like symptoms: evidence supporting the gut-lung axis

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Objective: To investigate whether frequent systemic antibiotic exposure in patients with chronic obstructive pulmonary disease is associated with a higher prevalence of irritable bowel syndrome-like symptoms and increased respiratory symptom burden, within the conceptual framework of the gut-lung axis.

Methods: We performed a cross-sectional observational study including adult patients with clinically stable chronic obstructive pulmonary disease who had received at least one systemic antibiotic course in the previous 12 months for infectious exacerbations. Patients were consecutively recruited and evaluated using Rome IV criteria for irritable bowel syndrome-like symptoms. Participants were stratified according to antibiotic exposure: 1-2 courses per year versus three or more courses per year. Stool form was assessed using the Bristol Stool Scale. Respiratory status was evaluated using the Chronic Obstructive Pulmonary Disease Assessment Test score, modified Medical Research Council dyspnea scale, annual exacerbation rate, and baseline forced expiratory volume in one second. Multivariable analysis was performed to explore associations between antibiotic exposure and gastrointestinal symptoms after adjustment for age, sex, smoking status, and airflow limitation severity.

Results: Forty-four patients were included (mean age 56.4 ± 8.2 years; 63.6% male). Twenty patients received 1-2 antibiotic courses and 24 received three or more courses in the previous year. Moderate-to-severe irritable bowel syndrome-like symptoms were significantly more prevalent in the higher exposure group (70.8% vs 35.0%, $p=0.02$). Patients with three or more antibiotic courses had higher assessment test scores (22.1 ± 5.4 vs 16.8 ± 4.9 , $p=0.01$), higher dyspnea scores (2.3 ± 0.6 vs 1.7 ± 0.5 , $p=0.03$), and more frequent exacerbations (3.2 ± 1.1 vs 1.9 ± 0.8 per year, $p<0.01$). These associations remained significant after adjustment for airflow limitation severity. No significant differences were observed in baseline forced expiratory volume between groups.

Conclusions: Frequent systemic antibiotic exposure in chronic obstructive pulmonary disease is associated with increased prevalence of irritable bowel syndrome-like symptoms and greater overall symptom burden, independent of airflow limitation. These findings provide clinical support for the gut-lung axis and highlight the need for integrated, multidisciplinary management strategies.

ABSTRACT CODE: IBS25620-77 - POSTER BOARD NO. 26

Phototherapy-Based Multimodal Rehabilitation Modulates Central Sensitization and Gut-Brain Axis Dysfunction in War-Related IBS: AI-Assisted Ultrasound Pilot Study

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Background: Central sensitization (CS) contributes to symptom persistence in irritable bowel syndrome (IBS), particularly in post-traumatic conditions. Objective biomarkers for monitoring treatment response remain limited. Multimodal ultrasound (US), combined with AI-based signal analysis, may provide functional insight into gut-brain axis (GBA) dysregulation.

Aim: To evaluate feasibility and preliminary efficacy of phototherapy-based multimodal rehabilitation using AI-assisted US biomarkers and clinical indices in patients with CS-associated IBS.

Methods: A prospective pilot study included 10 patients with war-related post-traumatic syndrome, IBS (Rome criteria), and CS (Central Sensitization Inventory, CSI ≥ 40).

Intervention: phototherapy (personalized light-mask photostimulation 460–480 nm), combined with psychotherapy, personalized diet, probiotics, physical therapy and selected ultrasound-guided dry needling (DN-US).

Assessments (pre/post):

- Clinical: CSI, pain (VAS), IBS severity
- Multimodal US protocol:
 - Intestinal US (small bowel, colon) with M-mode (10–60 s recordings)
 - AI-extracted motility parameters (frequency, amplitude, propagation pattern, variability)
 - Vascular Doppler (mesenteric artery velocity, renal resistive index, ophthalmic artery flow)
 - Neurodynamic markers (spinal root fluctuation, indirect CSF dynamics)
 - Structural/postural features

Results: At baseline, patients demonstrated heterogeneous peristalsis, increased or normal bowel wall thickness, elevated mesenteric velocities (>180 cm/s), and renal resistive index >0.7 .

Post-intervention:

- Reduction in CSI and pain scores
- Normalization of vascular parameters
- Improved ophthalmic artery Doppler (reduced resistance, increased flow)
- Enhanced coordination of intestinal motility patterns
- Modulation of neurodynamic markers following DN-US

Conclusion: AI-assisted multimodal ultrasound is a feasible tool for integrated assessment of CS and IBS. Phototherapy-based multimodal rehabilitation shows potential to modulate gut-brain-eye axis function, supporting personalized treatment strategies.

ABSTRACT CODE: IBS25615-81 - POSTER BOARD NO. 27

Prevalence and predictive factors of bile acid malabsorption in outpatients referred for a SeHCAT test

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Objectives: Bile acid malabsorption (BAM) is a common, yet underdiagnosed cause of chronic diarrhoea. The Selenium-75-homocholic acid taurine (SeHCAT) test is used to diagnose BAM, although patient selection for this test remains unclear in clinical practice and few studies have investigated factors associated with a positive test. The aim of this study was to determine the prevalence and predictive factors of a positive SeHCAT test and assess patients' reported response to BAM treatments.

Methods: This was a retrospective, single-centre UK study, that included consecutive patients who underwent SeHCAT testing for suspected BAM (January 2016-September 2018). A SeHCAT cut-off of <15% was used to divide patients into BAM and non-BAM groups. Data regarding demographics, symptoms, comorbidities, medications and BAM therapies were obtained from medical records. Independent risk factors were assessed using chi-squared, independent t-tests and multivariable logistic regression to compare patients with and without BAM. Odds ratios (ORs), p-values and 95% confidence intervals (CIs) were calculated to determine significance.

Results: 377 patients (64.7% female, mean age 49.6±16.3) were included, of whom 223 (59.2%) were diagnosed with BAM. At univariate analysis, BAM had a significantly higher weight (p=0.01), reported having more frequently type 2 diabetes (p=0.029), Crohn's disease (p=0.004), fibromyalgia (0.013), previous cholecystectomy (p=0.001) and tendency to have more ileocolic resection (p=0.051) but no autoimmune thyroiditis (p=0.036) and less abdominal radiotherapy (p=0.044) compared to non-BAM patients. BAM also reported more frequent use of diuretics (p=0.016), inhalers (p<0.001), diabetes therapies (p=0.022) and opioids (p=0.001) as compared to non-BAM patients. At multivariate analysis, higher weight and absence of constipation were independent predictors of BAM. In addition, ileo-colic resection, inhaler use and Crohn's disease showed borderline associations (Table 1). Patients with BAM were significantly more likely to be prescribed a bile acid sequestrant than non-BAM (p<0.001). Sixty-five (40.4%) out of 161 BAM patients prescribed with cholestyramine and 4 (20.0%) out of 20 prescribed with colesevelam reported a positive effect on their symptoms. There were no documented good responses to these therapies in patients without BAM.

Conclusions: These findings partially confirm previous studies suggesting clinical characteristics may increase the likelihood of BAM.

Predictor	p value	Odds Ratio	95% Confidence Interval	
			Lower	Upper
Weight (kg)	0.003	1.021	1.007	1.035
Constipation	0.005	0.360	0.176	0.738
Autoimmune thyroiditis	0.985	~0	-	-
Crohn's disease	0.094	4.030	0.787	20.630
Cholecystectomy	0.198	1.534	0.800	2.942
Ileo-colic resection	0.058	3.732	0.956	14.573
Abdominal radiotherapy	0.737	0.825	0.268	2.541
Diabetes	0.268	3.784	0.359	39.917
Fibromyalgia/CFS	0.155	4.763	0.555	40.880
Diuretic use	0.302	1.853	0.574	5.976
Diabetes medication	0.719	0.658	0.067	6.423
Inhaler use	0.061	2.184	0.964	4.950
Opioid use	0.189	1.532	0.811	2.894
CRP>5mg/L	0.997	1.001	0.495	2.026
Age (years)	0.652	0.996	0.979	1.014
Sex (female)	0.405	1.283	0.714	2.304

Table 1. Univariate Analysis of High-Resolution Impedance Manometry and Reflux Metrics in Relation to Anxiety and Depression

ABSTRACT CODE: IBS25666-87 - POSTER BOARD NO. 28

Rectal sensory dysfunction is more prevalent in slow transit constipation compared to both normal transit and outlet dysfunction constipation

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Introduction: Rectal sensory dysfunction is reported to be relevant etiology of refractory constipation, but its role across constipation subtypes remains unclear. We aimed to assess rectal sensitivity in different subtypes of chronic constipation patients refractory to conservative treatment.

Materials and methods: We enrolled 238 patients with chronic constipation refractory to conservative treatment. (Rome III criteria). All underwent:

- Anorectal manometry+balloon expulsion test, assessing rectal first sensation threshold, defecation threshold and maximum tolerated volume.
- Barium defecography in selected subjects (when manometry and balloon test were discordant).
- Colon transit by Rx-opaque markers.

Patients were classified as: dyssynergic defecation (DD), inadequate defecatory propulsion (IDP), isolated structural outlet obstruction (SOO, mostly large rectocele), isolated slow transit constipation (STC), normal transit constipation (NTC).

Results: Defecation disorders were found in 109 patients (45.8%): 73 DD and 36 IDP. Thirty-three (13.9%) had SOO, 30 (12.6%) had STC, and 66 showed normal physiology tests (NTC). According to rectal perception:

- STC patients showed higher first sensation threshold volumes than DD patients ($p=0.041$, Fig.1).
- STC patients showed higher volumes for all three sensory thresholds compared with NTC (Fig.1)

A positive correlation emerged between retained markers at colonic transit study and sensory dysfunction

Conclusions: Rectal hyposensitivity is prevalent in isolated slow transit constipation suggesting a visceral neuropathy potentially impairing both motor and sensory function of the large bowel. Consistently, patients with higher sensory thresholds were more likely to show delayed transit. A sensory dysfunction seems not relevant etiology for outlet dysfunction.

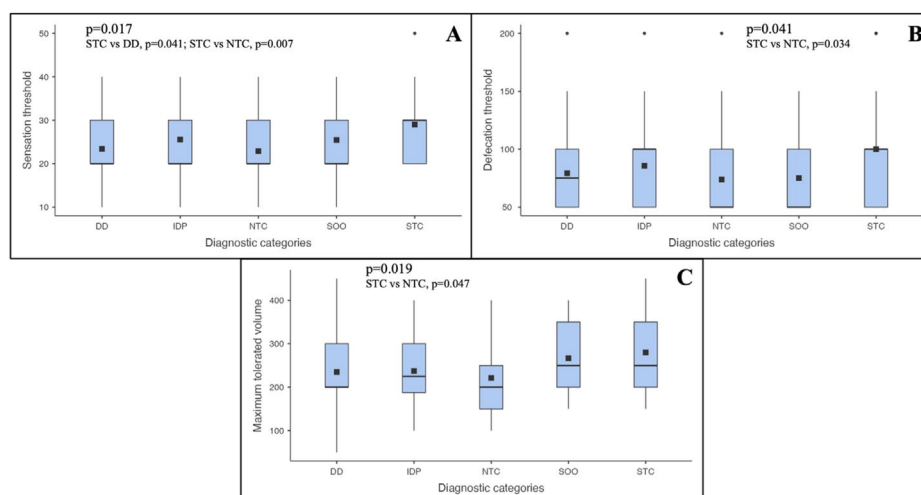


Figure 1. Rectal sensation among different subtypes of constipation. Panel A: sensation threshold; Panel B: defecation threshold; Panel C: Maximum tolerated volume. Statistics: Kruskal-Wallis test with multiple comparison and Bonferroni correction.

ABSTRACT CODE: IBS25662-83 - POSTER BOARD NO. 29

Shaping the Gut-Brain Axis in Chronic Intestinal Disease: How Anxiety-Depressive Symptoms and Dietary Habits Influence Gut Microbiota Diversity and Composition

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Backgrounds: Growing evidence supports bidirectional interaction along the gut-brain axis, where diet and gut microbiota influence psychological wellbeing. However, the role of anxiety-depressive symptoms in modulating gut microbiota composition remains unclear. This study investigated the relationship between anxiety-depressive symptoms, dietary patterns, and gut microbiota in inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), and healthy controls (HC).

Methods: 139 subjects (39 IBD, 50 IBS, 50 HC) were recruited at Fondazione Policlinico Universitario Campus Bio-Medico. Psychological assessment was performed using the Hospital Anxiety and Depression Scale (HADS). Dietary intake was evaluated through 7-day food diaries and nutrient analysis with WinFood. Gut microbiota from 131 stool specimens (36 IBD, 48 IBS, 47 HC) was analysed by sequencing the 16s rDNA V3/V4 region. Non-parametric t-test based on Monte Carlo permutations was used for alpha diversity comparisons (Faith's phylogenetic and Shannon's Indices), and PERMANOVA for beta diversity comparison (unweighted and weighted UniFrac).

Results: IBD and IBS patients showed significantly higher anxiety and depression scores compared with HC ($p < 0.01$). Dietary analysis showed reduced caloric intake and markedly lower fiber intake in patients versus HC ($p < 0.05$), with greater reductions in those reporting anxiety or depressive symptoms. Higher Mediterranean diet adherence inversely correlated with anxiety levels. Concerning microbiota, statistically significant differences in alpha diversity indices were observed among IBS, IBD and HC groups as well as among several subgroups. Beta-diversity confirmed similar trends, with HC clustering separately from both IBD and IBS patients with diarrhoea and constipation ($p < 0.05$). Regarding anxiety's impact on gut microbiota diversity and richness, significant differences in alpha and beta diversities ($p = 0.013$) were observed only in HC.

Conclusion: IBD and IBS are associated with gut microbiota alterations characterized by reduced diversity, alongside higher psychological burden and less favourable dietary patterns. Anxiety-depressive symptoms modulate gut microbiota composition and diversity, with detectable effects even in healthy controls, supporting their role within the gut-brain axis. Chronic intestinal disease remains the main driver of microbial variation, but its interaction with psychological distress and diet may sustain symptom persistence. These findings highlight the need for integrated approaches targeting psychological and nutritional factors in managing chronic intestinal disorders.

ABSTRACT CODE: IBS25638-86 - POSTER BOARD NO. 30

SIBO-Driven Symptom Burden and Differential Response to Rifaximin Across IBS Subtypes: A Prospective Study

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Background and Aim: Irritable Bowel Syndrome (IBS), classified under Rome IV as a disorder of gut-brain interaction, has been increasingly linked to microbial alterations. The contribution of Small Intestinal Bacterial Overgrowth (SIBO) across IBS subtypes and its impact on treatment response remain insufficiently defined in real-world settings.

The aim of the study was to evaluate SIBO prevalence across IBS subtypes (IBS-D vs IBS-C) and to assess differential symptom response and eradication rates following rifaximin therapy.

Methods: In this prospective study, adult IBS patients fulfilling Rome IV criteria, without alarm features and with normal fecal calprotectin and endoscopic assessment, were consecutively enrolled. Patients were subclassified into IBS-D and IBS-C. All underwent lactulose hydrogen breath testing (LHBT). SIBO-positive patients received rifaximin 400 mg twice daily for 14 days. Symptoms (bloating, abdominal pain, flatulence, diarrhea/constipation, overall well-being) were assessed using 11-point Likert scales at baseline and 6 weeks. Subgroup analyses compared treatment response between IBS-D and IBS-C. Repeat LHBT was performed in a subset.

Results: Among 150 patients (76% female; mean age 44±16 years), SIBO prevalence was 71%, with higher rates in IBS-D compared to IBS-C. Rifaximin led to significant overall symptom improvement, with greater reductions observed in IBS-D, particularly for bloating and diarrhea ($p<0.01$ vs IBS-C). IBS-C patients demonstrated more modest but significant improvements in abdominal pain and bloating. Overall well-being improved across both subgroups. Follow-up was available in 88%. Among retested patients ($n=65$), SIBO eradication was achieved in 85%, without significant differences between subtypes. Higher baseline symptom severity independently predicted treatment response.

Conclusion: This study demonstrates that SIBO is highly prevalent in IBS, particularly in IBS-D, and that rifaximin confers subtype-specific clinical benefits, with the greatest efficacy observed in IBS-D. These findings support a stratified, microbiota-targeted treatment approach and highlight the importance of IBS phenotyping in optimizing therapeutic outcomes.

ABSTRACT CODE: IBS25650-80 - POSTER BOARD NO. 31

Symptom fluctuations over time in Irritable Bowel Syndrome with and without psychiatric and somatic comorbid conditions. Results from the DISCOvERIE project

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Objective: The severity of symptoms of Irritable Bowel Syndrome (IBS) fluctuate over time, but few longitudinal studies have assessed this. Here, we study the fluctuations of IBS, psychological and somatic symptoms in IBS patients with and without diagnosed psychiatric and or somatic comorbid conditions.

Methods: Patients with IBS (Rome IV) with and without psychiatric (anxiety, depression) and or somatic (fibromyalgia, chronic fatigue) comorbid conditions were included from nine European centres in the DISCOvERIE project (Development, diagnosis and prevention of gender-related Somatic and mental Comorbidities in Irritable Bowel Syndrome In Europe, a H2020 Research Program of the European Commission) and were divided in IBS patients with 0, 1 (either psychiatric or somatic) or 2 (both psychiatric and somatic) comorbidities. They completed questionnaires on IBS symptoms (IBS-SSS), psychological (anxiety (GAD-7), depression (PHQ-9)), somatic (PHQ-12), fibromyalgia (FIQ) and fatigue symptoms (MFI) at three time points (baseline, 1 and 2 year follow-ups). Differences over time were analysed with 1-way between groups analysis of variance with linear trend analyses in IBS patients with increasing number of comorbidities and with assessment of IBS-SSS thresholds (remission: 0-74, mild 75-174, moderate 175-299, severe 300-500).

Results: In total, 158 IBS patients were included. Median age was 46 years (interquartile range 34-55 years) and 80% were females (Table 1). The IBS subtype distribution was 28% constipation, 36% diarrhoea, 32% mixed bowel habits and 4% unclassified IBS. Improvement over time was seen in IBS symptom severity in all IBS groups (0, 1, 2 comorbidities) (partial eta2: 0.055, 0.028, 0.029, respectively, $p < 0.001$ for all), in somatic symptom severity in IBS with 0 comorbidities (partial eta2= 0.013, $p = 0.02$) and in anxiety symptom severity in IBS with 1 comorbidities (partial eta2= 0.012, $p = 0.03$), but not for other symptoms (depressive and fibromyalgia symptoms and general and mental fatigue).

Conclusions: Variations in symptom severity over time is common in IBS. This study adds to the understanding of symptom fluctuations over time in IBS with and without psychiatric and somatic comorbid conditions.

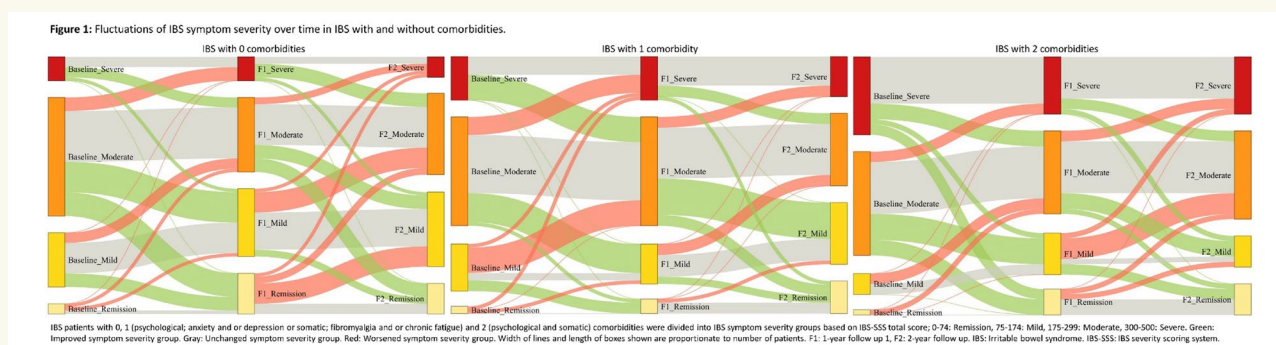


Figure 1: Fluctuations of IBS symptom severity over time in 18S with and without comorbidities.

ABSTRACT CODE: IBS25619-85 - POSTER BOARD NO. 32

The Effect of Gluten/Wheat-Free Diet in Patients with Irritable Bowel Syndrome on Symptom Severity and Well-being

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Background: Irritable Bowel Syndrome (IBS) is the prototype disorder of gut-brain interaction (DGBI) characterized by chronic abdominal pain and altered bowel habits. Wheat consumption has been reported to exacerbate symptoms due to a number of constituents, e.g. Fermentable Oligosaccharides, Disaccharides, Monosaccharides, and Polyols (FODMAPs) and Alpha-Amylase/Trypsin Inhibitors (ATIs). These components are more prevalent or bioactive in modern, highly processed wheat varieties compared to ancestral strains.

Objective: To assess the impact of a Gluten/Wheat-Free Diet (G/WFD) on gastrointestinal (GI) symptoms, extraintestinal manifestations, and Quality of Life (QoL) in patients with IBS, recruited in a tertiary center.

Methods: Thirty-five IBS patients (18-75 years) adhered to a high-content wheat diet, consuming at least 100 grams of wheat daily for the first month (T0). Then, they follow a G/WFD for 3 months (T1). Symptom severity and clinical outcomes were evaluated at the end of each period using validated questionnaires, i.e. the Modified Gastrointestinal Symptom Rating Scale (GSRS-m) for pain and bloating, the Visual Analogue Scale (VAS) for extraintestinal symptoms, the IBS Symptom Severity Scale (IBS-SSS), the IBS-QoL, and the FANTASTIC Lifestyle Questionnaire (FLQ).

Results: Preliminary data indicate a strong correlation between wheat exclusion and symptomatic relief. To date, 12 of the 35 enrolled patients have completed the T1 phase, while 23 are still following the G/WFD. Among those who completed T1, 9 patients (75%) demonstrated significant clinical improvement and were identified as wheat-sensitive IBS according to the Salerno Criteria (symptom improvement $\geq 30\%$). Only 3 patients showed no benefit.

Analysis of the GSRS-m revealed improvements exceeding 30% across several parameters: abdominal pain (54%), heartburn (37.5%), bloating/swelling (44.4%), nausea (40%), borborygmi (38.6%), and abdominal distension (39%). Improvements were also noted in stool consistency, urgency (47.4%) and incomplete evacuation (33.3%). With regard to extraintestinal symptoms (VAS), significant reductions were observed in fatigue (57.7%), dermatitis (45.45%), "foggy mind" (41.2%), and joint pain (37.14%). Overall QoL improved, particularly regarding body weight perception (35.5%) and psychological outlook (33.3%).

Conclusions: Despite the small cohort so far recruited, G/WFD appears to significantly alleviate both GI and extraintestinal symptoms and improve QoL in IBS patients.

NOTE

"Funded by the European Union - NextGenerationEU - PNRR M6C2-INVESTMENT 2.1 Enhancement and strengthening of the Italian National Health Service (SSN) biomedical research - PNRR-MCNT2-2023-12378038"

ABSTRACT CODE: IBS25601-76 - POSTER BOARD NO. 33

When Food Avoidance Meets Diagnostic Criteria: Avoidant/Restrictive Food Intake Disorder in Irritable Bowel Syndrome

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Introduction: Alone, the Nine Item Avoidant/Restrictive Food Intake Disorder (ARFID) Screen (NIAS) only allows for ARFID-like symptom detection and may overestimate its prevalence. We aimed to explore the prevalence of ARFID-like symptoms and ARFID DSM-5 (by applying Diagnostic Statistical Manual 5th Edition based criteria) in irritable bowel syndrome (IBS), and to compare characteristics associated with these definitions.

Methods: Adult patients with IBS according to Rome IV criteria, consulting in our tertiary care center between January 2024 and February 2025, were included. Patient data was collected using validated questionnaires assessing IBS and somatic symptom severity, quality of life, anxiety and depressive symptoms, sleep quality, and the French version of the NIAS (NIAS-Fr). ARFID-like symptoms were defined as meeting the cut-off for at least one NIAS-Fr subscale (≥ 10 on "picky" or "fear", or ≥ 9 on "appetite"). To apply DSM-5-based ARFID diagnostic criteria, a medical chart review using our center's clinical data warehouse was conducted for detecting medical impairment and eating disorder (ED) diagnosis. Patients were divided into two groups: without diagnosed ED, and ARFID DSM-5 (positive NIAS-Fr, no diagnosed ED, and at least one medical and/or psychosocial impairment). Multiple linear and logistic regression analyses were conducted to explore associations with NIAS-Fr score and meeting DSM-5 criteria, respectively.

Results: Among the 301 included patients, 50% (n=151) had ARFID-like symptoms, 29.6% (n=89) met DSM-5 based criteria for ARFID, and 5% (n=15) had a diagnosed ED (excluded from analyses). Functional dyspepsia (FD) was prevalent in 61.5% of patients. Older age (p-value=0.039), FD (p-value=0.005), and somatic symptom severity (p-value=0.001) were independently associated with the NIAS-Fr score (Adjusted R²=0.095). Depressive symptoms (p-value=0.026) and IBS symptom severity (p-value<0.0001) were independently associated with ARFID DSM-5 (Nagelkerke R²=0.22). Compared to patients without diagnosed ED, those meeting DSM-5-based criteria were more likely to follow a specific diet, have IBS-M, lower quality of life and sleep quality, higher somatic and IBS symptom severity and anxiety and depressive symptom levels (Table 1).

Conclusion: ARFID-like symptoms were more prevalent than ARFID DSM-5 in our IBS population. Applying DSM-5 based criteria was associated with more severe gastrointestinal and depressive symptoms. Standardized DSM-5 ARFID assessment methods remain to be established.

Variable	IBS Patients without diagnosed ED (n= 197)	IBS Patients with ARFID DSM-5 (n= 89)	P-value*
Demographics			
Female	152 (77.2)	69 (77.5)	0.945
Age (year)	44.2 ± 15.1	43.6 ± 15.5	0.785
BMI (Kg/m ²)	25.0 ± 5.3	24.8 ± 5.4	0.758
Diet			
Following specific diet	41 (20.8)	34 (38.2)	0.002
DGBI			
IBS-C	51 (25.9)	31 (34.8)	0.122
IBS-D	71 (36.0)	22 (24.7)	0.058
IBS-M	19 (9.6)	17 (19.1)	0.026
IBS-U	56 (28.4)	19 (21.3)	0.208
FD	107 (54.3)	65 (73.0)	0.003
Questionnaire Scores			
NIAS-Fr Score	12.8 ± 8.2	26.8 ± 7.4	<0.0001
Quality of Life (IBS-QOL)	67.2 ± 20.6	40.7 ± 21.7	<0.0001
Somatic Symptom Severity (PHQ-15)	13.1 ± 4.5	15.8 ± 5.3	<0.0001
Anxiety Symptoms (HAD-A)	9.6 ± 4.1	11.2 ± 4.9	0.004
Depressive Symptoms (HAD-D)	6.6 ± 3.5	8.7 ± 4.0	<0.0001
Sleep Quality (PSQI)	9.0 ± 3.4	10.5 ± 4.2	0.002
Insomnia Severity (ISI)	12.6 ± 5.7	14.6 ± 6.5	0.009
IBS Symptom Severity (IBS-SSS)	220.1 ± 105.7	294.5 ± 112.1	<0.0001

Results are presented as mean ± standard deviation, or number (percentage). BMI, Body Mass Index; FODMAP, Fermentable Oligo Di Monosaccharide And Polyols; DGBI, Disorders of Gut-Brain Interaction; IBS, Irritable Bowel Syndrome; IBS-C, IBS with predominant constipation; IBS-D, IBS with predominant diarrhea; IBS-M, IBS with mixed bowel habits; IBS-U, IBS unclassified; FD, Functional Dyspepsia; EPS, Epigastric Pain Syndrome; PDS, Postprandial Distress Syndrome; NIAS-Fr, French version of the Nine Item ARFID Screen; IBS-QOL, IBS Quality of Life; PHQ-15, Patient Health Questionnaire-15; ; HAD-A and D, Hospital Anxiety and Depression Scale (HAD-S); Pittsburgh Sleep Quality Index; ISI, Insomnia Severity Index; IBS-SSS, IBS Severity Scoring System; ED, Eating Disorder.

Table 1. Comparison between 18S patients with and without ARFID according to DSM-5 based diagnostic criteria.

ABSTRACT CODE: IBS25685-88 - POSTER BOARD NO. 34

Burden, Features and Factor Associated with Disorders of Gut-Brain Interaction In Italy: Results From the Rome Foundation Global Epidemiology Study

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Background and Aim: Disorders of gut-brain interaction (DGBI) are prevalent and burdensome conditions. This study aimed to assess the prevalence, regional distribution, and associated factors of DGBI in Italy, and to compare findings with the rest of Europe.

Methods: Data were drawn from the Rome Foundation Global Epidemiology Study. A representative sample of 2,063 Italian adults completed an internet-based questionnaire assessing DGBI presence, psychological distress, somatic symptoms, dietary habits, and healthcare utilization. Comparative analyses were conducted within the country and with other European countries. Multivariate logistic regression identified independent associated factors in Italy.

Results: Overall, 44.2% of Italian participants met criteria for at least one DGBI with higher prevalence in women and individuals aged 18–39 years. The South and Islands showed the highest DGBI prevalence. Functional constipation (13.9%) and functional dyspepsia (9.1%) were the most common DGBI, while irritable bowel syndrome affected 5.0% of the population. Psychological distress, somatic symptom burden, female sex, and younger age were independently associated with DGBI, while living in small rural communities showed an inverse association. Compared to the rest of Europe, Italy showed higher DGBI rates across multiple gastrointestinal regions and more frequent overlapping DGBI.

Conclusion: DGBI represent a substantial burden in Italy compared with the rest of Europe, with marked regional and psychosocial gradients.

ABSTRACT CODE: IBS25684-87 - POSTER BOARD NO. 35

Comparative Study on Burden, Features and Determinants of Disorders of Gut-Brain Interaction between Southern Europe and the Rest of Continent: Results From the Rome Foundation Global Epidemiology Study

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Background and Aim: Disorders of gut-brain interaction (DGBI) are highly prevalent worldwide. Although the epidemiology of DGBIs in Europe has been previously investigated, data comparing disease prevalence across European regions in relation to sociodemographic and lifestyle factors are lacking. Therefore, this study aimed to assess prevalence, regional distribution, and associated factors of DGBI in Southern Europe, and to compare findings with other European regions.

Methods: Data were drawn from the Rome Foundation Global Epidemiology Study (RFGES). A representative sample of 20,420 European adults completed a comprehensive internet-based questionnaire assessing DGBI presence, psychological distress, somatic symptoms, dietary habits, and healthcare utilization. Comparative analyses were conducted between Southern European countries and the rest of the continent (Northern, Western, and Eastern European countries). Multivariate logistic regression identified independent associated factors.

Results: The prevalence of adults with at least one DGBI was significantly higher in Southern Europe than in the rest of Europe (44.0% [42.4–45.5] vs. 39.0% [38.3–39.8]; $p < 0.001$). Irritable bowel syndrome and functional dyspepsia were more prevalent in Southern Europe than in the rest of Europe. Similar trends were found for functional constipation and functional diarrhea. Individuals with DGBI in Southern Europe showed higher psychological distress but lower somatic symptom burden and lower work productivity and activity impairment. In multivariable models, residence in Southern Europe, female sex, younger age, higher psychological distress, greater somatic symptom burden, higher educational attainment, urban residence and more frequent healthcare utilization were independently associated with DGBI.

Conclusion: Southern European populations exhibit a higher prevalence of DGBI compared to other European regions. Individuals with DGBI in Southern Europe showed higher rates of psychological distress, whereas those in the rest of Europe showed higher somatic symptom burden, greater work productivity and activity impairment. DGBI rates in Europe appear to be driven by a multifactorial interplay of demographic and psychosocial factors.

ABSTRACT CODE: IBS25251-77 - POSTER BOARD NO. 36

Distinct Pain Profiles Across Irritable Bowel Syndrome Subtypes: Results from the Rome Foundation Global Epidemiology Study

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Background: Abdominal pain is the hallmark symptom of irritable bowel syndrome (IBS), yet its clinical expression varies considerably across subtypes. Despite this, few large-scale studies have compared pain features across all Rome IV-defined IBS subtypes.

Aims: We aimed to delineate differences in abdominal pain patterns across IBS subtypes and evaluate the contribution of psychological comorbidities, extra-intestinal symptoms, and mediating factors linking IBS to psychological distress.

Methods: Data were derived from the internet survey of the Rome Foundation Global Epidemiology Study, encompassing 54,127 participants from 26 countries, including 2,195 IBS patients [712 constipation-predominant IBS (IBS-C), 629 diarrhea-predominant IBS (IBS-D), 712 mixed-type IBS (IBS-M), 142 unclassified-IBS (IBS-U)]. Clinical, dietary, and psychological parameters were assessed using validated questionnaires. Mediation analysis examined the roles of illness perception, food avoidance, and work/activity impairment in explaining psychological distress among IBS patients.

Results: IBS-C patients exhibited longer, more severe, and widespread pain, often radiating to the back and associated with greater analgesic use, while pain in IBS-D patients was linked to stool frequency and consistency changes. IBS-C patients reported greater dissatisfaction with bowel function, IBS-U patients frequently identified abdominal pain and bloating/distention as their most bothersome symptom. Psychological distress was prevalent across all subtypes (69-78%), with greater somatization in IBS-C and IBS-M. Mediation analyses revealed partial effects of concerns about bowel function, embarrassment, and work/activity-related impairment, but not food avoidance.

Conclusions: IBS subtypes demonstrate distinct pain and psychosocial profiles. Psychological burden is partly mediated by illness perceptions and work/activity impairment, emphasizing importance of personalized, multimodal management strategies.

ABSTRACT CODE: IBS25248-83 - POSTER BOARD NO. 37

Do DGBIs Follow the Hygiene Hypothesis?: Analyses from the Rome Foundation Global Epidemiology Study

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Background: Despite growing interest in its role in immune-mediated diseases, the relevance of the Hygiene Hypothesis to disorders of gut-brain interaction (DGBIs) remains unclear.

Aim: To examine associations between childhood and current hygiene-related exposures and the prevalence of DGBIs in a large multinational population-based sample, and to evaluate whether these associations persist after adjustment for sociodemographic and national development indicators.

Methods: This cross-sectional study included adults from 26 countries in the internet survey arm of the Rome Foundation Global Epidemiology Study (N=54,127). DGBIs were defined using Rome IV criteria. Childhood (≤ 7 years) and adult hygiene-related exposures included farm residence, running water, electricity, and rural residence, with cumulative hygienic exposure calculated separately for each period. Country-level development was assessed using the Human Development Index (HDI).

Results: Lower HDI were associated with higher DGBI prevalence (p for trend <0.001). In fully adjusted models, absence of running water (OR 0.83, 95% CI 0.77-0.90) and electricity (OR 0.87, 95% CI 0.78-0.97) in adulthood were associated with lower odds of DGBI. Childhood farm exposure was associated with higher odds of DGBI (OR 1.12, 95% CI 1.04-1.20), irritable bowel syndrome (OR 1.21, 95% CI 1.03-1.42), and functional dyspepsia (OR 1.26, 95% CI 1.12-1.43). Higher childhood cumulative hygienic exposure was associated with higher DGBI prevalence, with no material modification by HDI.

Conclusions: Greater cumulative hygienic exposure, particularly in childhood, was associated with higher prevalence of DGBIs. These findings suggest that early-life environmental conditions may contribute to global variation in DGBI burden.

ABSTRACT CODE: IBS25262-79 - POSTER BOARD NO. 38

Epidemiology of irritable bowel syndrome in chile: differences across healthcare systems and urban-rural populations

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Introduction and Aims: Irritable bowel syndrome (IBS) is one of the most prevalent disorders of gut-brain interaction (DGBI), with an estimated global prevalence ranging from 4.1% to 11%. However, prevalence data remain largely unknown in many countries and across different populations. The aim of this study was to determine the prevalence of IBS in Chile using the Spanish-validated Rome IV diagnostic criteria across different settings, including public and private healthcare facilities and community-based populations, with comparisons between urban and rural groups.

Methods: We assessed IBS prevalence using the Spanish-validated Rome IV questionnaire in different cohorts: gastroenterology outpatients (public/private hospitals) and general populations (street interview) including urban residents and rural Mapuche communities. Data were analyzed with chi-square and Mann-Whitney tests using GraphPad Prism.

Results: We evaluated IBS prevalence and subtypes in 8,717 gastroenterology outpatients (public n=8082 vs private hospitals n=635), 776 urban and 110 rural/Mapuche individuals. IBS prevalence was higher in public vs. private outpatients (36.2% vs 23.3%; $p<0.0001$) and in females versus males in the urban cohort only. Rural/Mapuche and urban populations showed comparable IBS prevalence (30.9% vs 25.7%; $p=0.26$), with a trend toward higher mixed-type IBS in rural participants. Subtype distributions differed by setting and sex.

Conclusions: IBS is highly prevalent in Chile, particularly among public hospital outpatients and urban females. Prevalence is similar between urban and rural/Mapuche populations. These data provide novel insights into IBS epidemiology in a Latin American country with marked socioeconomic heterogeneity and may inform future population-based and mechanistic studies in diverse settings.

ABSTRACT CODE: IBS25613-79 - POSTER BOARD NO. 39

Evacuation-Related Relief of Dyspeptic Symptoms Influences Diagnostic Classification Toward Irritable Bowel Syndrome Over Functional Dyspepsia

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Background and Aims: Disorders of gut-brain interaction (DGBI) are defined by symptom-based criteria after exclusion of structural and major motility disorders; however, clinicians often incorporate additional symptom modifiers in diagnostic reasoning. We evaluated whether relief of dyspeptic symptoms after bowel movements and/or flatus is associated with physician-assigned diagnoses, symptom patterns, and concordance with Rome IV criteria.

Methods: We performed a cross-sectional analysis of the multinational AEGIS cohort, including adults with physician-diagnosed DGBI across 11 countries. Dyspeptic symptom domains were defined by the presence of symptoms, independent of frequency or fulfillment of Rome-IV criteria (PDS:postprandial fullness and/or early satiation; EPS:epigastric pain and/or burning). The main explanatory variable was evacuation-related symptom relief ($\geq 30\%$ improvement after bowel movement and/or flatus), assessed separately for PDS- and EPS-type symptoms. Primary outcomes were physician-based diagnoses of functional dyspepsia (FD) and irritable bowel syndrome (IBS). Multivariable logistic regression models were adjusted for age, sex, body mass index, geographic region, gastrointestinal symptom severity (PAGI-SYM), and somatic symptom burden (PHQ-12).

Results: A total of 1,074 patients were included (66.8% female; mean age 42.6 $\pm$ 14.6 years). Dyspeptic symptoms were common, with 60.7% reporting PDS-type symptoms and 53.6% reporting EPS-type symptoms. Evacuation-related symptom relief was reported in 55.1% of patients with PDS-type symptoms and 51.7% with EPS-type symptoms. It was more frequent in patients with an IBS-only physician diagnosis than in those with FD-only (PDS: 75.3% vs 44.3%; EPS: 73.0% vs 44.4%), with intermediate frequencies in FD-IBS overlap (PDS: 60.2%; EPS: 48.6%). In adjusted analyses, evacuation-related symptom relief was associated with higher odds of IBS diagnosis and lower odds of FD diagnosis across both symptom domains (Table 1). These associations remained robust for IBS in sensitivity analyses using Rome IV criteria, frequency thresholds and in analyses restricted to patients fulfilling FD Rome-IV criteria but without a physician-based FD diagnosis.

Conclusions: Evacuation-related relief of dyspeptic symptoms is strongly associated with physician-based diagnostic classification, particularly a positive IBS diagnosis and reduced likelihood of FD diagnosis. These findings suggest that symptom modifiers not incorporated in current criteria influence diagnostic reasoning and should be considered in future refinements of DGBI classification frameworks.

Analysis	Domain	IBS aOR (95% CI)	FD aOR (95% CI)	Interpretation
Primary outcome all patients - physician diagnosis	PDS	2.38 (1.64–3.46)	0.56 (0.39–0.81)	↑ IBS / ↓ FD
	EPS	2.45 (1.69–3.57)	0.53 (0.37–0.75)	↑ IBS / ↓ FD
Sensitivity analyses				
All patients - Rome IV diagnosis	PDS	2.53 (1.80–3.57)	0.82 (0.58–1.17)	↑ IBS / — FD
	EPS	3.23 (2.15–4.86)	0.85 (0.58–1.26)	↑ IBS / — FD
Only patients with Rome IV frequency threshold - physician diagnosis	PDS	2.83 (1.82–4.40)	0.46 (0.29–0.74)	↑ IBS / ↓ FD
	EPS	2.16 (1.40–3.35)	0.53 (0.33–0.85)	↑ IBS / ↓ FD
Only patients with FD diagnosis discordance (Rome IV criteria +, physician -)	PDS	2.02 (1.23–3.32)	—	↑ IBS
	EPS	1.84 (1.10–3.08)	—	↑ IBS

Footnote: FD functional dyspepsia IBS irritable bowel syndrome PDS postprandial distress syndrome EPS epigastric pain syndrome aOR adjusted Odds Ratio.

Adjusted for age, sex, BMI, geographic region (Europe/Asia-Australia), gastrointestinal symptom severity (PAGI-SYM), and somatic symptom burden (PHQ-12). Evacuation-related symptom relief defined as $\geq 30\%$ improvement after bowel movement and/or flatus.

Table. Associations Between Evacuation-Related Dyspeptic Symptom Relief ($\geq 30\%$) and IBS and FD Diagnoses

ABSTRACT CODE: IBS25263-80 - POSTER BOARD NO. 40

Global IBS, regional phenotypes: variability in pain, bloating, and daily life impact across asian and western european patients from the aegis survey

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Introduction and Aim: Irritable bowel syndrome (IBS) shows geographic variability in symptom expression. Although abdominal pain defines diagnosis, bloating may be a major determinant of disease burden. We compared bloating prevalence, severity, and clinical impact across IBS subtypes in Eastern and Western European populations from the multinational AEGIS survey, and evaluated its association with overall symptom severity, psychological burden, and quality of life.

Methods: In this cross-sectional study, adults fulfilling Rome IV criteria for IBS were recruited from 16 tertiary and secondary centers. Participants were categorized into Eastern (Asia-Pacific) and Western European cohorts. Validated instruments assessed IBS subtype, abdominal pain and bloating severity, IBS Symptom Severity Score (IBS-SSS), IBS-specific quality of life (IBS-QoL), anxiety (GAD-7), depression (PHQ-9), somatic symptom burden (PHQ-15), dietary triggers, and postprandial symptoms. Regional comparisons used nonparametric and chi-square tests. Postprandial symptom timing (0-240 minutes) and perceived food triggers were systematically recorded.

Results: Among 1,074 participants, 339 had IBS (31.6%), with lower prevalence in Asia-Pacific versus Western cohorts (20.9% vs. 40.9%, $p=0.039$). IBS-D predominated in Asia-Pacific countries, whereas IBS-M was more common in Western Europe ($p<0.05$). Western patients showed higher psychological burden and IBS-SSS scores ($p=0.029$). Pain intensity was similar between regions, but bloating severity was greater in Western patients ($p<0.001$). Bloating correlated more strongly with impaired IBS-QoL than pain ($r=-0.552$ vs. -0.260 ; $p<0.001$). In Asia-Pacific participants, postprandial symptoms were linked to distinct dietary patterns, characterized by higher intake of dairy products, gluten-containing foods, coffee, and carbonated beverages, alongside reduced rice consumption. In contrast, dietary patterns among Western patients showed minimal variation according to postprandial symptom status.

Conclusions: Despite uniform Rome IV criteria, IBS phenotypes differ across regions. Meal-related symptom perception in IBS differs across regions and is closely linked to dietary context. Bloating, more than pain, was most strongly associated with impaired quality of life, supporting a symptom-centered and culturally tailored management approach.

ABSTRACT CODE: IBS25683-86 - POSTER BOARD NO. 41

Global prevalence of functional abdominal bloating according to Rome Criteria: systematic review and meta-analysis

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Introduction: Functional abdominal bloating/distension (FAB) is a gastrointestinal disorder classified among disorders of gut-brain interaction and frequently reported in adults. Although often perceived as bothersome or disabling, and experienced at least weekly by about 18% of individuals, FAB remains underestimated in clinical practice. Its true global prevalence is still uncertain due to the subjective nature of symptoms and their overlap with other gastrointestinal conditions.

Methods: This systematic review and meta-analysis aimed to estimate the global prevalence of FAB in the general population according to Rome III and Rome IV diagnostic criteria. A comprehensive search of MEDLINE and EMBASE was conducted up to September 2025. Fourteen observational studies, including a total of 116,087 individuals aged ≥ 16 years, met the inclusion criteria. Data were pooled using a random-effects model to estimate overall prevalence and to perform subgroup analyses based on diagnostic criteria, sex, geographic region, questionnaire type, and mode of administration.

Results: The overall pooled prevalence of FAB was 5.2% (95% CI: 3.8%–6.7%), with substantial variability depending on the diagnostic criteria applied. Prevalence was significantly higher when using Rome III criteria (13.8%; 95% CI: 8.1%–20.7%) compared to Rome IV criteria (3.9%; 95% CI: 2.9%–5.1%), likely reflecting the stricter definition in the latter. FAB was more common in females than males, with prevalence rates of 5.7% (95% CI: 3.9%–7.9%) and 3.9% (95% CI: 2.8%–5.2%), respectively. Among women, prevalence reached 19.4% with Rome III criteria but decreased to 3.1% with Rome IV. Geographic differences were observed, with higher prevalence in Western countries (7.3%; 95% CI: 5.5%–9.3%) compared to Eastern countries (3.0%; 95% CI: 1.4%–5.1%). Questionnaire methodology also influenced results, as studies using non-standardized or approximated tools reported higher prevalence (8.9%; 95% CI: 4.5%–14.7%). Significant heterogeneity persisted across studies.

Conclusion: FAB is a common global disorder, affecting 3.9% to 13.8% of adults depending on diagnostic criteria, with higher prevalence in women. Regional variability suggests environmental, dietary, cultural, and genetic influences. Standardized diagnostic approaches are needed, and future studies should explore factors such as smoking, anxiety, and depression.

ABSTRACT CODE: IBS25616-82 - POSTER BOARD NO. 42

Impact of sub-diagnostic bowel symptoms in the general population

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Objective: Functional bowel disorders (FBD) are the most common disorders of gut-brain interaction. Less is known about individuals with frequent bowel symptoms, but who do not meet Rome VI FBD criteria. In this study, we aim to investigate factors associated with these sub-diagnostic bowel symptoms and their impact in the general population.

Methods: We included individuals who participated in a Swedish population-based internet health survey reporting ≥ 1 symptom above the Rome IV FBD frequency threshold. They were categorized in 1) sub-diagnostic bowel symptoms, i.e. not fulfilling Rome IV FBD criteria, or 2) Rome IV FBD. Individuals without frequent bowel symptoms included in the same survey served as a reference group. The survey included validated questionnaires to assess bowel symptom severity (IBS-SSS), non-gastrointestinal (GI) somatic symptoms (PHQ-12), psychological distress (PHQ-4), GI-specific anxiety (VSI), and health-related quality of life (QOL)(EQ-5D-5L).

Results: In total, 166 individuals were included in the sub-diagnostic bowel symptoms group (62.0% females; mean age 34.3 years), 535 in the Rome IV FBD group (70.8% females; mean age 37.8 years), and 1,622 in the reference group (59.0% female; mean age 40.8 years). The most common symptoms in the sub-diagnostic group were straining during bowel movements (52.4%) and feeling of incomplete emptying after bowel movements (47.6%). All individuals in the sub-diagnostic group did not fulfill Rome IV FBD criteria due to lack of chronicity. Within the Rome IV FBD group, the most common FBD were functional constipation (28.2%) and irritable bowel syndrome (25.4%). The sub-diagnostic bowel symptoms group was intermediate between the reference and Rome IV FBD groups on bowel symptom severity, non-GI somatic symptoms, psychological distress, and health-related QOL (Figures). GI-specific anxiety was higher in both the sub-diagnostic and Rome IV FBD groups compared to the reference group, but did not differ between the two groups with bowel symptoms.

Conclusions: Sub-diagnostic, non-chronic bowel symptoms are clinically relevant with impact on overall disease burden and QOL. This suggests that individuals with frequent bowel symptoms who do not fulfill Rome IV FBD, could still benefit from monitoring and potential treatment to prevent further deterioration of symptoms and QOL.

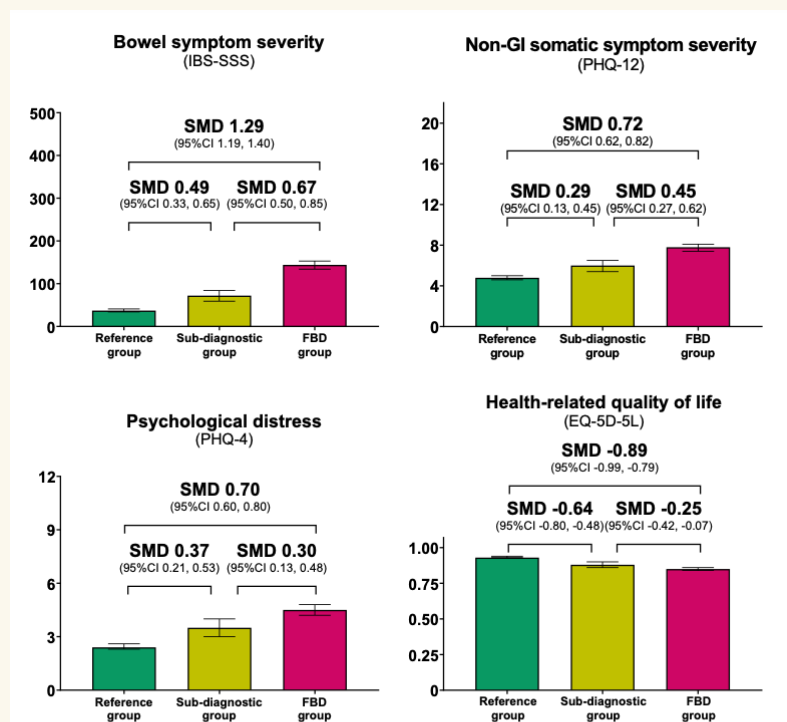


Figure. Comparison of bowel symptom severity, non-GI somatic symptom severity, psychological distress, and health-related QOL between the three groups. Means (95%CI) are shown.

FBD; Rome IV functional bowel disorder, SMD; standardized mean difference. SMD 0.2-0.5 indicate small, 0.5-0.8 medium, and >0.8 large differences.

ABSTRACT CODE: IBS25579-90 - POSTER BOARD NO. 43

Incomplete Bowel Emptying is Common and Associated with Impaired Quality of Life in Individuals with Bowel Symptoms in the General Population

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Introduction: A feeling of incomplete emptying after bowel movements can be a bothersome symptom. This study aims to investigate the prevalence and impact of incomplete bowel emptying in individuals with bowel symptoms in the general population.

Methods: We included individuals who completed an online survey in Sweden and reported ≥ 1 bowel symptom above the frequency threshold for a Rome IV functional bowel disorder (FBD). The survey included validated questionnaires to assess severity of bowel (IBS-SSS), non-gastrointestinal (non-GI) somatic (PHQ-12), and psychological (PHQ-4) symptoms, as well as quality of life (QOL) (EQ-5D-5L). Individuals who reported feelings of incomplete bowel emptying were stratified into three groups based on the percentage of bowel movements with feeling of incomplete bowel emptying during the last three months: no (0%), occasional (10–40%), and frequent ($\geq 50\%$ of the times). The impact of the frequency of incomplete bowel emptying on quality of life was also assessed.

Results: We included 825 individuals (18-70 years, 66% females) with bowel symptoms, and of these, 537 (18-70 years, 65.1% females) fulfilled the Rome IV criteria for an FBD. Number of individuals who reported any frequency of feeling incomplete emptying was 678 (82%). Of these, 424 (63%) and 254 (37%) individuals reported feeling of incomplete emptying occasionally and frequently respectively. The prevalence of frequent incomplete emptying in those with a FBD was highest among individuals with opioid induced constipation (63%) followed by IBS (61%) and functional constipation (45%) (Figure 1). Among individuals with IBS, frequent incomplete emptying was more common in IBS-C (73%) and IBS-M/U (72%) compared to IBS-D (44%). With increasing frequency of incomplete emptying, a gradual increase in the severity of bowel, non-GI somatic, and psychological symptoms, and reduction in QOL were noted. More frequent incomplete bowel emptying was independently associated with impaired QOL after adjusting for sex, bowel, non-GI and psychological symptom severity ($\beta = -0.421(95\%CI, -0.706, -0.135)$, $p = .004$).

Conclusion: A feeling of incomplete emptying is prevalent in individuals with bowel symptoms in the general population, regardless of bowel habit. Increasing frequency of these symptoms is associated with an increasing overall symptom burden and reductions in QOL.

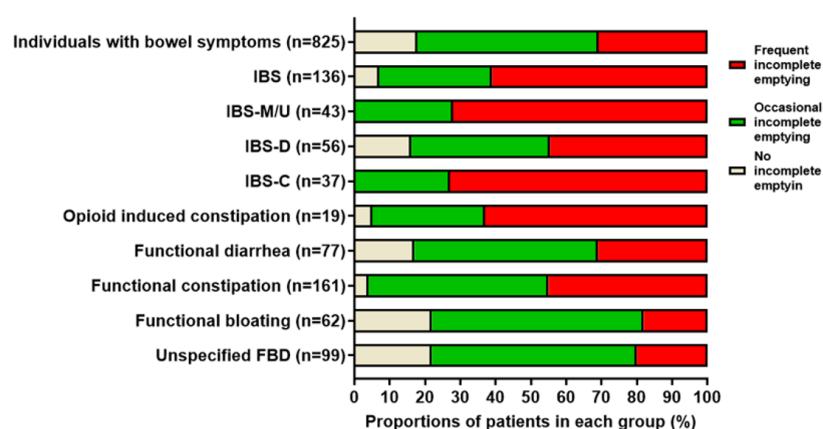


Figure 1. Prevalence of a feeling of incomplete emptying after a bowel movement in individuals with bowel disorders. Functional bowel disorder (FBD).

ABSTRACT CODE: IBS25578-89 - POSTER BOARD NO. 44

Prevalence and burden of disorders of gut-brain interaction in Nigeria: results from the Rome foundation global epidemiology study

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Background: Data on the prevalence and the impact of disorders of gut-brain interaction (DGBI) are lacking for most parts of Africa, including Nigeria, the country with the largest population of the continent. Therefore, we aimed to investigate the prevalence and burden of DGBI, including regional differences, in the Rome Foundation Global Epidemiology Study (RFGES) in Nigeria.

Methods: We included Nigerian population-based data from RFGES, obtained via face-to-face interviews with adult participants. Quota-based inclusion to achieve equal sex distribution and pre-defined age distribution (40% 18-39years, 40% 40-64 years and 20% ≥65 years) was applied across the 6 geopolitical regions of Nigeria. The survey included questionnaires to assess the presence of Rome IV DGBI compatible symptom profiles, severity of non-gastrointestinal (non-GI) somatic (PHQ-12) and psychological (PHQ-4) symptoms, mental and physical quality of life (PROMIS-10), demographics, health care utilization and selected medical history.

Results: We included 1,632 individuals (48.6% females, mean age 44 (range 18-100) years). The prevalence of any DGBI in Nigeria was 23.5% (95%CI 21.5%-25.6%), with a higher prevalence in females (26.1% (23.2%-29.3%)) than in males (21.0% (18.4%-23.9%)). The highest prevalence of DGBI per anatomical region was seen for bowel disorders followed by gastroduodenal disorders, and the most prevalent individual DGBI diagnoses in decreasing order were functional dyspepsia, unspecified functional bowel disorder, proctalgia fugax, functional constipation, and irritable bowel syndrome (Table 1). Compared to individuals without DGBI, individuals with DGBI were older and more commonly females, and reported lower physical and mental quality of life, more severe psychological and non-GI somatic symptoms, and increased healthcare utilization. There was a north-south gradient with higher prevalence of any DGBI observed in the northern regions than in the southern regions.

Conclusions: In this household survey, we demonstrate that DGBI are prevalent and impactful in Nigeria, in line with studies from other parts of the world. More studies are needed to further understand the epidemiology of DGBI in Nigeria and other parts of the world where this is understudied.

DGBI	Prevalence % (95% CI)	DGBI	Prevalence % (95% CI)
Esophageal disorders	3.6 (2.9-4.6)	Bowel disorders	17.6 (16.0-19.4)
Functional heartburn	1.0 (0.6-1.5)	Irritable bowel syndrome	3.0 (2.3-3.8)
Functional chest pain	0.9 (0.5-1.4)	Functional constipation	4.2 (3.4-5.2)
Reflex Hypersensitivity	1.3 (0.9-1.9)	Opioid induced constipation	1.8 (1.2-2.4)
Globus	0.1 (0-0.4)	Unspecified functional bowel disorder	6.6 (5.6-7.9)
Functional Dysphagia	1.2 (0.8-1.8)	Functional diarrhoea	1.0 (0.7-1.6)
Gastroduodenal disorders	9.0 (7.8-10.4)	Functional bloating	0.4 (0.2-0.8)
Functional dyspepsia	7.3 (6.2-8.5)	Anorectal disorders	7.7 (6.7-9.0)
Belching disorder	1.0 (0.6-1.5)	Fecal incontinence	0.8 (0.4-1.2)
Rumination syndrome	0.5 (0.2-0.9)	Levator ani syndrome	2.4 (1.8-3.2)
Chronic nausea and vomiting syndrome	0.3 (0.1-0.7)	Proctalgia fugax	4.6 (3.8-5.6)
Cyclic vomiting syndrome	0.5 (0.2-0.9)	Others	
Cannabinoid hyperemesis syndrome	0.0 (0.0-0.2)	Centrally mediated abdominal pain	0.2 (0.1-0.6)
Disorders of gut-brain interaction (DGBI), Confidence interval (CI)		Functional biliary pain	0.1(0.0-0.3)

Table1. The prevalence rates of DGBI diagnoses (Rome IV) from a household survey in Nigeria.

ABSTRACT CODE: IBS25618-84 - POSTER BOARD NO. 45

Prevalence of Disorders of Gut-Brain-Interaction in pediatric patients with in-remission Inflammatory Bowel Disease: an Italian multicenter study

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Objectives: Pediatric patients with in-remission inflammatory bowel disease (IBD) often report persistent gastrointestinal symptoms, suggesting a potential overlap with Disorders of Gut-Brain-Interaction (DGBIs). While DGBIs affect up to 40% of the general population, their prevalence in quiescent IBD children remains limited. We aimed to evaluate the prevalence and distribution of DGBIs, based on Rome-IV criteria, in children with quiescent IBD compared to healthy controls, identifying demographic, clinical and therapeutic factors associated with DGBIs.

Methods: In this multicenter, prospective, controlled study, in-remission IBD pediatric patients and healthy controls were enrolled completing the Rome IV-Questionnaire. IBD-remission was defined by PUCAI/aPCDAI scores <10, normal inflammatory markers and recent endoscopic mucosal healing.

Results: 41 pediatric patients with IBD in remission and 179 healthy controls were enrolled. DGBIs were found in 41.46% of IBD-patients versus 27.93% of controls ($p=0.089$). Functional Dyspepsia was significantly more prevalent in IBD patients ($p<0.001$), while irritable bowel syndrome was more frequent among controls, though not significantly ($p=0.466$). No differences in DGBI prevalence emerged between Crohn's disease and ulcerative colitis ($p=0.54$). At the multivariate analysis, psychological comorbidities (OR 40.767, $p<0.001$) and low weight (OR 0.953, $p<0.001$) were significantly associated with DGBIs. Notably, 5-aminosalicylic-acid (ASA) administration was associated with reduced DGBIs likelihood (OR 0.139, $p=0.005$).

Conclusions: In our cohort, the overall DGBIs prevalence was numerically but not significantly higher in quiescent-IBD patients compared to controls, while upper gastrointestinal DGBIs were significantly more frequent in IBD patients. Psychological and nutritional factors emerged as strong predictors of DGBIs, while 5-ASA may be associated with lower likelihood of DGBIs.

ABSTRACT CODE: IBS25250-76 - POSTER BOARD NO. 46

Symptom Burden and Quality of Life in Individuals with Diabetes and Disorders of Gut-Brain Interaction (DGBI): A Cross-Sectional Study Using Data from the Rome IV Global Epidemiology Study

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Background: Gastrointestinal symptoms are common in diabetes and overlap with disorders of gut-brain interaction (DGBI), potentially amplifying overall burden. We compared multidomain symptom burden, quality of life (QoL), and healthcare utilization across individuals with DGBI only, diabetes only, and coexisting DGBI+diabetes, and examined obesity as an effect modifier.

Methods: Cross-sectional analyses used the internet survey arm of the Rome Foundation Global Epidemiology Study. Participants were classified by self-reported physician-diagnosed diabetes and Rome IV DGBI criteria. Outcomes included gastrointestinal symptom indices, psychological distress, somatic symptoms, PROMIS Global Health, healthcare utilization and medications, and FFQ-based intake frequency.

Results: Among 23,939 participants, 20,055 had DGBI only, 2,205 diabetes only, and 1,679 DGBI+diabetes. Across gastrointestinal outcomes, a consistent gradient was observed (overall $p < 0.001$), with highest burden in DGBI+diabetes, intermediate in DGBI only, and lowest in diabetes only. Psychological distress and somatic symptoms were markedly higher in both DGBI groups than in diabetes only (overall $p < 0.001$), while differences between DGBI+diabetes and DGBI only were modest and symptom-specific. Healthcare utilization was greatest in DGBI+diabetes (overall $p < 0.001$). Obesity-stratified analyses showed attenuated between-group contrasts for several outcomes. Interaction models identified effect modification by obesity for selected endpoints, including reversal for abdominal distention/bloating and differential magnitudes for pain and frequent physician visits.

Conclusions: Coexisting DGBI and diabetes is associated with the greatest multidomain burden and healthcare use. Obesity modifies key associations, underscoring the need for integrated, phenotype-informed care.

ABSTRACT CODE: IBS25602-77 - POSTER BOARD NO. 47

A FODMAP-Gentle Diet: Effective Symptom Relief Without Increased Nutritional Risk in Tertiary Care Irritable Bowel Syndrome

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A FODMAP-gentle diet has been proposed as a less restrictive alternative to the traditional low FODMAP diet for irritable bowel syndrome (IBS), but evidence on its effectiveness and safety remains uninvestigated. We aim to evaluate the efficacy of the FODMAP-gentle application in tertiary-care IBS, evaluating gastrointestinal symptoms, nutritional intake, weight change, avoidant restrictive food intake disorder (ARFID) symptoms and psychosocial outcomes.

Patients with IBS completed a 2-week baseline period followed by 8 weeks using the FODMAP-gentle diet (DOMINO app). Daily symptom diaries assessed abdominal pain (duration and severity), bloating, flatulence, daily symptom impact, and stool habits using the Bristol Stool Scale (BSS). Seven-day food diaries were collected at baseline and during diet. IBS symptom severity (IBS-SSS), ARFID symptoms (NIAS defined meeting ≥ 1 subscale cutoff (Picky Eating ≥ 10 , Appetite ≥ 9 , Fear ≥ 10) and DSM-5 impairment), and psychosomatic comorbidity questionnaires (PHQ-9/15, GAD-7) were completed at baseline and after diet.

Among 72 patients with IBS (75% female, 34(27-45) years, BMI 24(22-28) kg/m²), the diet significantly reduced IBS-SSS (270(220-330) vs. 150(103-210), $p < 0.0001$) with a 76% responder rate (≥ 50 points improvement). Daily symptom diaries (table 1) demonstrated significant reductions in abdominal pain duration and severity, bloating, flatulence, and daily symptom impact (all $p < 0.001$). Stool frequency remained stable, normal stools (BSS 3-5) increased, soft stools (BSS 6-7) and urgency episodes decreased (all $p < 0.01$). Caloric intake decreased minimally after diet (-160(-350-60) kcal/day, $p < 0.001$), no weight loss was observed. Total FODMAP intake decreased from 12(10-18) to 8(5-13) g/day, $p < 0.0001$. Quality of life and psychosocial measures improved significantly, including extraintestinal symptoms, depression, and anxiety (all $p \leq 0.01$). At baseline, 21% met criteria for ARFID+, decreasing to 18% after the diet ($p < 0.001$). Five participants developed new ARFID-like symptoms, while eight remitted ($p = 0.58$). Compared to baseline, picky eating scores remained stable, while appetite and fear scores decreased after diet ($p < 0.05$).

The FODMAP-gentle app significantly improved IBS symptoms, quality of life, and psychosocial wellbeing in IBS. The diet was safe, with minimal caloric reduction, no weight loss, and no increase in overall ARFID risk, supporting its use as an effective and less restrictive dietary strategy for IBS management.

	Baseline	Diet	p value
IBS symptoms			
Duration abdominal pain	39 (30-51)	15 (7-26)	< 0.001
Severity abdominal pain	34 (23-45)	12 (7-26)	< 0.001
Bloating	42 (26-54)	13 (7-25)	< 0.001
Flatulence	40 (27-55)	14 (9-27)	< 0.001
Daily symptom impact	34 (20-44)	11 (6-27)	< 0.001
Stool diary			
Stool frequency	24 (16-32)	20 (16-27)	0.053
Stool consistency			
Hard stools	1 (0-5)	1 (0-4)	0.96
Normal stools	10 (6-14)	12 (9-16)	< 0.001
Soft stools	4 (1-7)	1 (0-2)	< 0.001
Stool urgency	2 (1-4)	1 (0-2)	< 0.001

Table 1. Comparison between IBS symptoms and stool pattern at baseline vs diet. IBS symptoms are scored on a 0-100 mm Likert scale. Stool frequency is reported as times per two weeks, and stool consistency is reported as days per Bristol Stool Scale {855} types over two weeks, categorized as hard (type 1 and 2), normal (type 3, 4 and 5) or soft stools (type 6 and 7).

ABSTRACT CODE: IBS25617-83 - POSTER BOARD NO. 48

Effect of Virtual Reality-Supported Psychotherapy for the Treatment of Irritable Bowel Syndrome

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Objective: Psychological interventions are effective for irritable bowel syndrome (IBS), but their implementation in routine clinical practice is limited by resource constraints. We aimed to develop an original, remote psychological intervention supported by virtual reality (VR) that is accessible to patients.

Methods: Eighty-one patients with IBS (85% women; mean age 40 ± 13 years) were included: 40% diarrhea-predominant, 44% mixed subtype, and 16% constipation-predominant. Participants were randomized 1:1 to an intervention or control group. Intervention group received an on-site psychoeducation session delivered through a specifically developed VR video, followed by a 6-week psychotherapy consisting of a weekly remote group session led by a psychologist, and daily self-administered VR-supported sessions at home. Control group received one daily placebo capsule (0.5 g glucose) for 6 weeks. Outcomes included gastrointestinal symptoms (IBS Symptom Severity Score; IBS-SSS), perceived stress (Perceived Stress Scale, PSS), and anxiety and depression (Hospital Anxiety and Depression Scale, HADS), assessed at baseline and post-intervention.

Results: Intervention group showed a greater reduction in IBS-SSS compared with placebo (score reduction: -39 ± 60 vs -10 ± 53 ; $p = 0.015$). This effect was mainly driven by improvement in the pain domain (-8 ± 17 vs 1 ± 13 ; $p = 0.022$). Perceived stress decreased more in the intervention group (-6 ± 8 vs -2 ± 6 ; $p = 0.012$). Significant reductions were also observed in anxiety (11.2 ± 3.7 vs 9.6 ± 3.7 ; $p < 0.001$) and depression scores (7.4 ± 4.4 vs 6.1 ± 3.9 ; $p = 0.017$). In contrast, the control group showed worsening depression scores (6.9 ± 4.6 vs 8.0 ± 5.1 ; $p = 0.012$) and a modest improvement in anxiety (11.0 ± 4.3 vs 10.0 ± 4.2 ; $p = 0.03$).

Conclusion: A self-administered, home-based psychological intervention supported by VR is superior to placebo in improving gastrointestinal symptoms and associated psychological comorbidities in IBS. These findings suggest that digital technologies enhance access to psychological care for patients with disorders of gut-brain interaction, particularly in settings with limited availability of psychotherapists. The study also underscores the importance of including placebo-controlled designs when evaluating psychological interventions in IBS.

ABSTRACT CODE: IBS25633-81 - POSTER BOARD NO. 49

Efficacy and Safety of Postbiotics in Irritable Bowel Syndrome: A Systematic Review and Meta-analysis

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Background and aim: Postbiotics, preparations of inanimate microorganisms and/or their components with health benefits, may offer potential advantages in the management of IBS, but evidence remains limited. We conducted the first systematic review and meta-analysis to assess the efficacy and safety of postbiotics in adults with IBS.

Methods: PubMed, Scopus, Embase, and Web of Science were searched from inception to January 2026 for randomized controlled trials (RCTs) comparing postbiotics with placebo in adults diagnosed with IBS by Rome III or IV criteria. Primary outcomes were changes in the IBS Symptom Severity Scale (IBS-SSS) and achievement of $\geq 30\%$ abdominal pain reduction. Secondary outcomes included quality of life (QoL) and treatment-emergent adverse events (TEAEs). Risk of bias was assessed using Cochrane RoB 2.0 and certainty of evidence using GRADE. Meta-analyses were conducted using RevMan 5.4.

Results: Four RCTs including 1,062 participants were analyzed "Table1". Postbiotics significantly reduced IBS-SSS scores compared with placebo (standardized mean difference [SMD] -1.36 , 95% CI -1.75 to -0.97 ; $P < 0.00001$). Postbiotics increased the likelihood of achieving a clinically meaningful pain response (risk ratio [RR] 2.46 , 95% CI 1.96 – 3.57 ; $P < 0.00001$). QoL improved with oral capsule formulations (SMD 0.84 , 95% CI 0.67 – 1.01 ; $I^2 = 0\%$), but not when an enema-based study was included. TEAE rates were similar between groups (RR 0.68 , 95% CI 0.34 – 1.35 ; $P = 0.27$). Heterogeneity was moderate to substantial. Certainty of evidence was low.

Conclusions: Postbiotics may improve IBS symptom severity and abdominal pain, with oral formulations showing potential QoL benefits and comparable safety to placebo. Larger, standardized RCTs are required to confirm these findings.

Author/year	Location	Year	Design	POPULATION		INTERVENTION				COMPARATOR		
				Rome Criteria	IBS subtype	Sample Size	Age	Postbiotic used	Dose&Duration	Sample Size	Age	MA
Andersen 2020	Germany	2020	RCT	ROME III	all types	221	40-1 (12-8)	Non-viable B bifidum HI-MIMBb75 cells	2 capsules once daily for 8 weeks	222	42-6 (13-8)	A,B,C,D
Mack 2021	Germany	2021	RCT	ROME III	all types	191	47.47 (15.66)	Suspension of Nonviable bacterial lysate of E.coli (DSM17252) and E.faecalis (DSM16440)	10 drops*3/day for week then m20*3/day for week then 30 *3/day for 24 weeks (total 26weeks)	198	45.86(15.90)	B,D
Bednarska 2022	Seweden	2022	RCT	ROME IV	IBS-D, mixed	18	37 (19-55)	Reform oat gruel fermented with Lactobacillus plantarum 299v	Enema , 250 ml twice daily, for 2 weeks	12	37(19-55)	C
Srivastava 2024	India	2024	RCT	ROME IV	IBS-D	68	34.88 (9.56)	Heat-treated Bifidobacterium longum CECT 7347 (HT-ES1)	2 capsules once daily for 12 weeks	probiotic:65, placebo:67	Probiotic: 37.28 (11.04), placebo:35.73 (11.42)	A,B,C,D

The table summarizes key study details, including author/year, country, sample size, postbiotic formulation, dosage, intervention duration, and outcomes assessed: (A) IBS-SSS (Irritable Bowel Syndrome Symptom Severity Scale), (B) abdominal pain reduction $\geq 30\%$, (C) QoL (Quality of Life), and (D) TEAE (Treatment-Emergent Adverse Events). MA denotes meta-analysis outcomes.

Table 1. Characteristics of included randomized controlled trials (RCTs) evaluating postbiotics in irritable bowel syndrome (IBS).

ABSTRACT CODE: IBS25625-82 - POSTER BOARD NO. 50

Evaluation of the Usability of “The Ten Dietary Commandments” for Patients with Irritable Bowel Syndrome: An Expert Opinion on Dietary Strategies with Clear and Practical Recommendations for IBS Management

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Aims: The “Ten Dietary Commandments” evaluates current evidence on nutritional management of irritable bowel syndrome (IBS) and proposes a pragmatic framework, designed to optimize adherence, symptom relief, and quality of life through individualized and evidence-based dietary guidance.

We evaluated its feasibility and usability in daily clinical practice.

Methods: A comprehensive literature search identified 188 eligible studies, including randomized controlled trials, meta-analyses, systematic reviews, and clinical guidelines on dietary interventions for IBS. Extracted data encompassed efficacy, sustainability, and outcomes of major dietary strategies such as low-FODMAP, Mediterranean, gluten-free, lactose-free, high-fiber diets.

Since January 2026, we have implemented a visual format of the “Ten Dietary Commandments” (Fig. 1) in the daily routine of gastroenterology clinics, involving four different nutrition experts and two physicians (a gastroenterologist and a resident in Gastroenterology).

We have evaluated their opinion on it, using the System Usability Scale (SUS), which is a 10-item, 5-point Likert questionnaire measuring perceived ease of use, offering quick, standardized, reliable, and subjective evaluation.

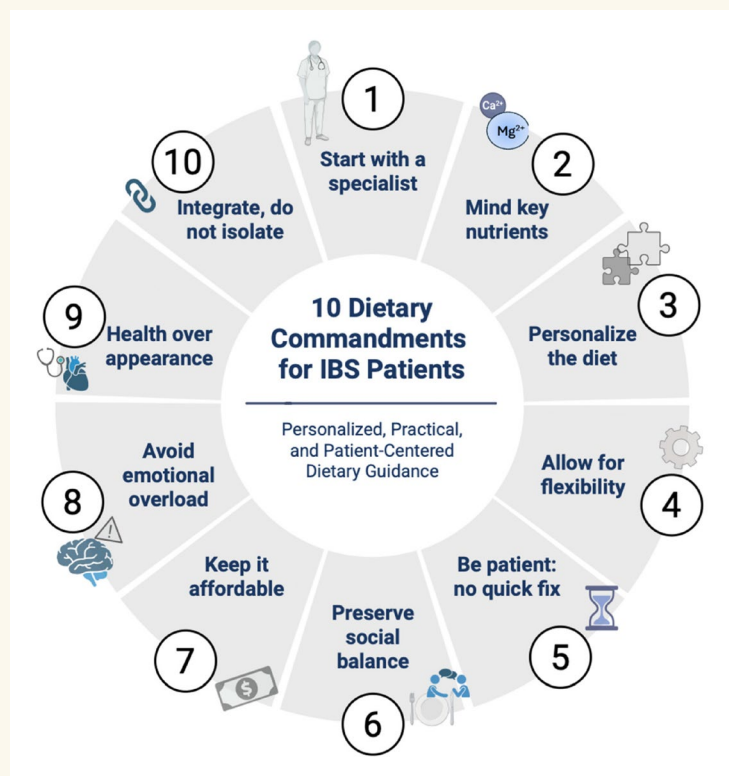
Results: The low-FODMAP diet is the most extensively studied and provides short-term symptom relief, but its long-term effects on microbiota diversity remain concerning. The Mediterranean diet, due to its anti-inflammatory and prebiotic properties, offers a sustainable, microbiota-friendly option; however, it has specific limitations in the context of IBS, particularly due to the adverse effects of certain FODMAP-rich foods. A gluten-free diet may benefit individuals with self-reported non-celiac wheat sensitivity, although improvements are often attributed to fructan restriction and placebo/nocebo effects. Lactose-free diets are effective in patients with documented lactose intolerance, while a high-soluble-fiber diet is beneficial for constipation-predominant IBS.

Overall, flexible and multidisciplinary dietary management significantly enhances adherence and reduces symptom severity in real-world settings.

Regarding the SUS questionnaire, statistical analysis (N = 6) showed a good level of usability (M = 76.5, SD = 9.4) among the healthcare professionals.

Conclusions: No single dietary regimen suits all IBS patients. The “Ten Dietary Commandments” synthesizes evidence with clinical expertise, offering clear and practical, dietary recommendations, with a good level of usability in daily clinical practice.

This expert framework may improve symptom control and quality of life while minimizing restrictive behaviors often associated with unsupervised exclusion diets.



ABSTRACT CODE: IBS25614-80 - POSTER BOARD NO. 51

Management strategies among patients with lower gastrointestinal symptoms – A multinational survey with a focus on irritable bowel syndrome

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Objective: Lower gastrointestinal (GI) symptoms, irritable bowel syndrome (IBS) in particular, are prevalent. This survey aims to identify treatment pathway and opportunities for advancement through understanding how patients manage lower GI symptoms, with a focus on IBS.

Methods: An online survey covering France, Germany, Italy, Spain and UK was conducted. Adults aged over 18, suffering from IBS symptoms more than once monthly were approached to answer an online questionnaire to understand their symptoms over the past 12 months.

Results: 2,506 patients (20% per country) completed the questionnaire. Lower GI symptoms are common across countries, reported by 46% to 65% respondents. 43% respondents were diagnosed with IBS, with the highest rate in Germany (55%), followed by UK (51%), Italy (43%), Spain (37%) and France (31%). Bloating and stomach pain were the most common IBS symptoms. IBS sub-types were broadly balanced in all countries, except Germany skewing towards IBS with diarrhoea.

Stress and/or anxiety were viewed as major triggers for all symptoms while constipation was also strongly linked to lifestyle triggers like insufficient fibre or fluid intake. For all symptoms, IBS patients were more likely to seek medical support while non-IBS patients preferred self-medication. Doctor or pharmacist consultation dominated first-step options to manage symptoms among IBS patients in all countries. Patients consistently showed willingness to try lifestyle modification and alternative treatments after their first-step action.

Across countries, habit and having treatment at home were key reasons to self-medicate for all symptoms. Although healthcare professionals are common source of information when choosing medication, reliance on internet search, friends and family was noted in Spain and UK. Worsening symptoms or ineffective treatment drove patients to seek medical support. Overall quality of life (e.g. work, social life, sleep) was adversely affected by all symptoms with diarrhoea and constipation showing higher proportion of patients reporting major/enormous impact.

Conclusions: This survey reiterated a high prevalence of lower GI symptoms and IBS with patient's quality of life negatively influenced. It highlights the need of patient education to ensure timely and appropriate symptom management for advancing treatment pathway, especially when patients opt for self-mediation or alternative treatments.

ABSTRACT CODE: IBS25631-79 - POSTER BOARD NO. 52

Supragastric Belching-Induced Reflux: From Diagnosis to Resolution Through Cognitive-Behavioral Therapy – A Case Report

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Aims/Purpose: This case report describes a patient with gastroesophageal reflux induced by supragastric belching (SGB), highlighting the diagnostic value of 24-hour pH-impedance monitoring and the therapeutic efficacy of cognitive-behavioral therapy (CBT). The aim is to clarify the functional mechanisms linking SGB to reflux and to emphasize CBT as an effective therapeutic intervention.

Methods: A 26-year-old woman with daytime belching and acid regurgitation partially responsive to proton pump inhibitors (PPI) underwent high-resolution esophageal manometry and 24-hour pH-impedance monitoring off therapy. Belching episodes were quantified and classified as gastric or supragastric, and their temporal association with reflux events was evaluated. After confirming the SGB-reflux relationship in the absence of structural abnormalities, a structured CBT program was initiated, including symptom-awareness training and diaphragmatic breathing exercises.

Results: pH-impedance monitoring revealed pathological acid exposure and 82 belching episodes, 79% of which were supragastric. SGB consistently preceded reflux events, suggesting a causal role. Following CBT with gradual PPI tapering, the patient achieved complete clinical remission. Repeat pH-impedance monitoring confirmed normalization of acid exposure and a marked reduction in belching frequency.

Conclusion: SGB is a well-defined functional behavioral disorder within the Rome IV classification, capable of inducing or exacerbating gastroesophageal reflux. Once identified through pH-impedance monitoring, CBT represents a highly effective, non-pharmacological therapeutic strategy that can normalize both symptoms and objective reflux parameters. Early recognition of SGB and timely implementation of targeted behavioral therapy may prevent unnecessary treatment and significantly improve clinical outcomes.

ABSTRACT CODE: IBS25629-86 - POSTER BOARD NO. 53

Topical Capsaicin as a Novel and Effective Treatment for Cannabinoid Hyperemesis Syndrome through TRPV1 Modulation: Case Report and Systematic Review of the Literature

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Aims/Purpose: The aim of this study was to conduct a systematic review of the available literature on Cannabinoid Hyperemesis Syndrome (CHS) and to present a clinical case with severe complications, emphasizing the therapeutic role of topical capsaicin. The study focuses on epidemiology, pathophysiology, diagnostic criteria, and emerging therapeutic strategies for CHS.

Methods: A systematic literature review was performed using PubMed and Google Scholar with the MeSH terms: "Cannabinoid Hyperemesis Syndrome," "Cyclic Vomiting," "Cannabis," "Hyperemesis," and "Hot Baths." Included studies comprised original articles, case reports, systematic reviews, meta analyses, and official documents involving adult patients with confirmed CHS, published in English or Spanish up to January 2025. Pediatric studies and non-CHS-related conditions were excluded. Additionally, a retrospective analysis was performed on a 35-year-old male with chronic cannabis use and recurrent vomiting complicated by cardiac arrest. After discharge, topical capsaicin was introduced as adjunctive therapy for symptomatic control.

Results: The literature confirmed that CHS is frequently underdiagnosed and often mistaken for other gastrointestinal disorders. In the presented case, cannabis cessation led to symptom resolution. During follow-up, topical capsaicin provided rapid relief of residual symptoms through TRPV1 modulation.

Conclusion: CHS is a potentially severe and underrecognized condition. Early identification of hallmark features (cyclic vomiting, hot-shower relief, and chronic cannabis use) is essential. Cannabis cessation remains the cornerstone therapy, while topical capsaicin represents a safe, inexpensive, and effective adjunctive option that may improve clinical outcomes.

ABSTRACT CODE: IBS25610-76 - POSTER BOARD NO. 54

UDCA supplementation modulates intestinal homeostasis in a preclinical model of IBS

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Irritable bowel syndrome (IBS) is a disorder of the gut-brain axis that affects approximately 10–15% of the global population according to the Rome IV diagnostic criteria. While there is growing evidence implicating gut bacterial metabolites such as short-chain fatty acids, amino acid derivatives and secondary bile acids in IBS, their exact roles are not yet fully understood. We therefore examined a candidate metabolite with potentially beneficial effects on intestinal function.

Male C57BL/6J mice in the IBS group (n=16) were administered ovalbumin (OVA; 50mg) and lipopolysaccharide (LPS; 1mg/kg/day) orally by gavage for three consecutive days. Control mice (CT; n=16) received an equivalent volume of saline solution. On days 14 and 28, all mice were subjected to restraint stress for 2 hours. From day 35, the IBS group was re exposed to OVA (50mg) via oral gavage every day until day 47. From day 35 to day 48, 8 control mice (CT+UDCA) and 8 IBS mice (IBS+UDCA) were supplemented daily by oral gavage with ursodeoxycholic acid (UDCA; 120mg/kg), a secondary bile acid whose fecal levels are altered in IBS patients. Anxiety- and depressive like behavior were assessed using a nest-building test. Fecal samples were collected weekly to measure fecal calprotectin levels. Colonic segments were collected to study, via RT-qPCR, the intestinal permeability.

The nest-building test revealed no significant differences between CT and IBS groups. On day 7, following OVA and LPS exposure, fecal calprotectin levels were significantly higher in IBS mice compared to CT mice. A Similar trend was observed following re-exposure to OVA (day 49). UDCA supplementation significantly reduced fecal calprotectin levels in IBS mice. No differences in colonic barrier function were observed in IBS and CT mice. However, UDCA treatment increased colonic expression of Cldn4 compared to IBS untreated mice.

This study suggests that UDCA supplementation may beneficially modulate intestinal homeostasis in a mouse model of IBS. However, further investigations including histological analysis using Cytot-Hyperion XTi) are required to confirm these results. The abundance of bacterial taxa will be assessed. Neurons from the dorsal root ganglia innervating the intestine were exposed to various stimuli to assess neuronal activation.

ABSTRACT CODE: IBS25658-88 - POSTER BOARD NO. 55

A Probiotic Formulation of Lactobacillus rhamnosus GG and Lactobacillus plantarum 299V Restores Epithelial Barrier Integrity following IBS-Derived Mucosal Mediators: results from an in vitro study

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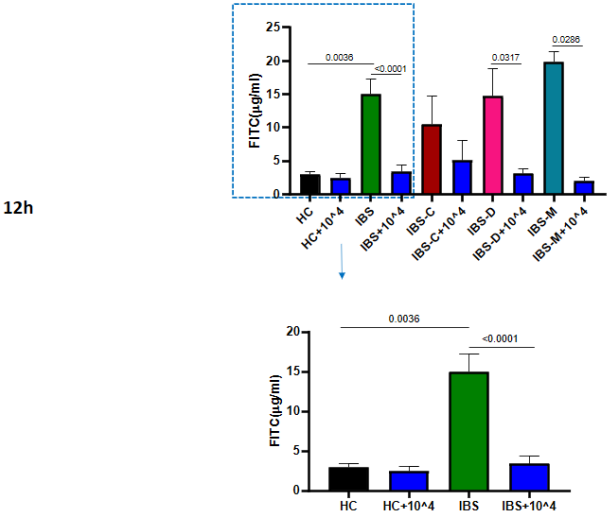
Irritable bowel syndrome (IBS) is a disorder of gut-brain interaction characterized by recurrent abdominal pain and altered bowel habits. Probiotics represent one of the therapeutic strategies available. This study aimed to evaluate the impact of a multi-strain probiotic formulation (PF) consisting in a mix of Lactobacillus rhamnosus GG and Lactobacillus plantarum 299V on an in vitro model of the intestinal epithelial barrier exposed to mucosal mediators derived from IBS patients.

IBS patients (n = 30; IBS with predominant diarrhea, IBS-D = 10; IBS with predominant constipation, IBS-C = 10; and IBS with mixed bowel habits, IBS-M = 10), diagnosed according to the Rome IV criteria, and healthy controls (HC, n = 10) were enrolled. Mucosal mediators derived from colonic biopsies were collected, and from now on called supernatants. Caco-2 monolayers were exposed to supernatants from IBS patients and HC. The PF was tested at a concentration of 10⁴ CFU/mL in two experimental settings: (i) co-incubation with supernatants for 8 h; (ii) 6 h pre-incubation with IBS or HC supernatants, followed by 6 h treatment with the PF. Total RNA was then extracted to assess tight junction (TJ) gene expression, including zonula occludens-1 (ZO-1), occludin (OCLN), and junctional adhesion molecule A (JAM-A).

Supernatants derived from IBS patients significantly increased Caco-2 paracellular permeability compared to those from HC (p = 0.0036). Co-incubation for 8 h significantly restored paracellular permeability altered by exposure to IBS-derived supernatants (p < 0.0001). Following 6 h pre-exposure to IBS supernatants, subsequent treatment with the PF for 6 h significantly restored epithelial permeability (p < 0.001), with a more pronounced effect observed for IBS-D (p = 0.0317) and IBS-M (p = 0.0286) subtypes. Moreover, the treatment significantly increased TJ-related gene expression, including ZO-1 (p = 0.0003), OCLN (p = 0.0091) and JAM-A (p = 0.0058) compared to Caco-2 cells exposed to IBS supernatants alone.

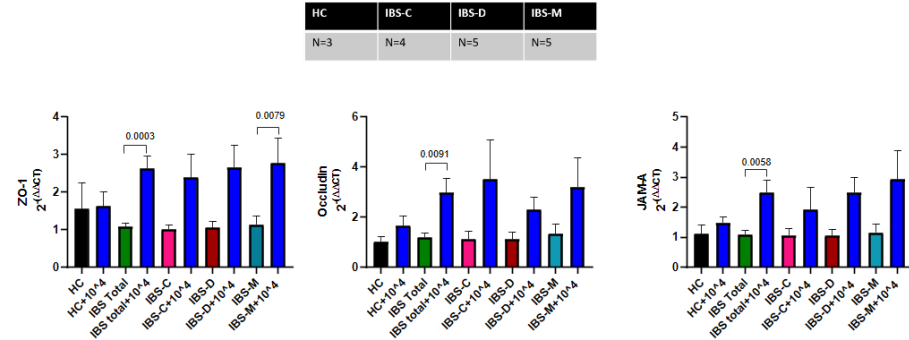
The PF of Lactobacillus rhamnosus GG e Lactobacillus plantarum 299V at a concentration of 10⁴ CFU/mL restores alterations in epithelial barrier function induced by prior exposure to IBS-derived mediators, likely through modulation of TJ proteins expression.

EFFECT OF DICOFLOR ON CACO-2 PARACELLULAR PERMEABILITY
FOLLOWING A 6 HOUR PRE-INCUBATION WITH MUCOSAL MEDIATORS



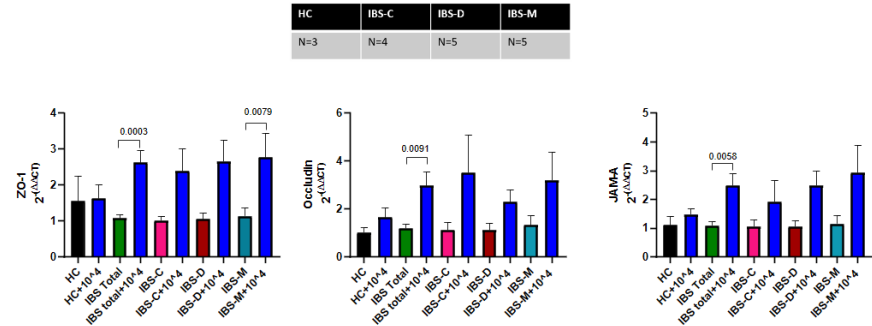
TIGHT JUNCTION QPCR FOLLOWING A 6 h PRE-INCUBATION WITH MUCOSAL MEDIATORS AND 6h DICOFLOR INCUBATION

Expression was calculated considering corresponding condition without DICOFLOR as calibrator in a subgroup of patients



TIGHT JUNCTION QPCR FOLLOWING A 6 h PRE-INCUBATION WITH MUCOSAL MEDIATORS AND 6h DICOFLOR INCUBATION

Expression was calculated considering corresponding condition without DICOFLOR as calibrator in a subgroup of patients



ABSTRACT CODE: IBS25606-81 - POSTER BOARD NO. 56

Benchmarking disaccharidase activity: comparative analyses of duodenal biopsy assays, computational predictions, clinical classifications, and genetic testing

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Objective: Disaccharidase dysfunction is a known driver of bowel symptoms, increasingly recognised in IBS-D and functional diarrhoea. Genetic forms involve a spectrum of hypomorphic variants across disaccharidase genes including LCT (lactase), SI (sucrase-isomaltase) and, possibly, MGAM and MGAM2 (maltase-glucoamylases). Functional interpretation remains challenging, relying on heterogeneous approaches including enzymatic activity measured from duodenal biopsies, computational predictions (ie AlphaMissense - AM), patients' data from diagnostic laboratories (ClinVar) and, seldom, experimentation in vitro. We aimed to benchmark the performance of AM, ClinVar and ex vivo-derived disaccharidase functional classifications versus LCT, SI, MGAM and MGAM2 genetic variants.

Methods: Duodenal disaccharidase activity (lactase, sucrase, palatinase, maltase, and glucoamylase) was measured in 119 adult patients (74% female) with IBS-D (55%) or functional diarrhoea (40%). Rare and common genetic variants were identified, respectively, by whole exome sequencing and genotyping. AM predictions and ClinVar classifications were benchmarked against biopsy data, established deficiency cutoffs and additive dosage effects tested in linear regression models adjusting for age, sex, and ethnicity.

Results: For 47 rare variants, AM predictions exhibited only 60% concordance with ex vivo biopsy data, while ClinVar classifications were mostly uninformative (due to variants of uncertain significance). Among 11 common variants, three LCT variants (p.N1639S, p.V219I, rs4988235C) significantly associated with lactase activity ($p < 0.001$), but joint modelling proved this was entirely driven by the lactase persistence regulatory SNP (rs4988235). Common SI and MGAM2 missense variants drove only modest changes, though AM and ex vivo data often conflicted with previously established in vitro hypomorphic patterns. Crucially, genotype-adjusted lactase residuals correlated strongly with all other disaccharidases ($r = 0.71-0.77$, $p < 10^{-12}$), suggesting ex vivo measurements are heavily confounded by pre-analytical factors.

Conclusions: No current approach adequately resolves disaccharidase variant function. The LCT locus highlights the critical necessity of joint modelling to disentangle genetic confounding from true functional consequence. Given the inherent noise in biopsy measurements and the limitations of in silico or clinical models, current gold standards may need careful re-evaluation. The development of quantitative, highly sensitive in vitro disaccharidase assays is urgently needed to establish ground-truth functional consequences and guide precision diagnostics in IBS and other GI conditions affected by disaccharidase dysfunction.

ABSTRACT CODE: IBS25608-83 - POSTER BOARD NO. 57

Cross-definition GWAS of irritable bowel syndrome in 2.8 million individuals reveals cardiometabolic and triglyceride-linked mechanisms

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Objective: Irritable bowel syndrome (IBS) is a complex disorder of gut-brain interaction, with heterogeneous symptoms, no available biomarkers, and limited pathogenetic insight. We aimed at identifying genetic risk factors and actionable mechanisms for future clinical translation in IBS.

Methods: We conducted a genome-wide association study (GWAS) meta-analysis of IBS in 2,775,539 individuals from 22 biobanks. IBS genetics was studied across multiple ancestries, different case definitions, and symptom-related subtypes. Heritability and genetic correlations with other traits were estimated, and Mendelian randomization used to test causal relationships. GWAS data were functionally annotated and fine-mapped to prioritize tissues, cell types, pathways, candidate genes, specific mechanisms, and druggable targets.

Results: Significant heritability was only detected in individuals of European ancestry, with near-identical genetic architecture across case definitions. Genetic correlations with gastrointestinal, psychiatric, and cardiometabolic traits were observed, including causal relationships with triglyceride (TG) levels. Functional annotation of IBS risk loci highlighted cell types and pathways relevant to brain, enteric neuroglial, and cardiometabolic domains, as well as actionable targets like GCKR, a regulator of TG metabolism. Druggability analyses converged on cardiometabolic mechanisms, including TG modulation. Polygenic risk scores for IBS were computed and validated and may have applicability for risk prediction and differential diagnosis.

Conclusions: This study provides the most comprehensive assessment of IBS genetics to date, demonstrating reproducible polygenic inheritance. We link IBS risk to convergent neurogastrointestinal and novel cardiometabolic mechanisms, highlight specific biological pathways and actionable mechanisms, and outline translational opportunities emerging from integrated computational analyses.

ABSTRACT CODE: IBS25630-78 - POSTER BOARD NO. 58

Development and Validation of GI Symptoms Animated Pictograms (GAPs) as a Diagnostic Tool for GI dysfunction Among Patients with Cognitive Impairment

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Background: Gastrointestinal (GI) dysfunction is highly prevalent among patients with cognitive impairment yet remains chronically underdiagnosed. Existing text-based questionnaires demand high verbal comprehension and are prone to interviewer bias, inter-observer variability, and caregiver-proxy inaccuracies. Non-verbal communication, however, remains relatively preserved across cognitive decline stages. We aimed to develop and validate the first animated pictogram-based diagnostic tool – the Gastrointestinal Animated Pictograms (GAPs) – to enhance GI symptom reporting and diagnosis in this population.

Methods: Following a literature review incorporating SAGIS and Rome IV criteria, a multidisciplinary team of gastroenterologists, animators, and software engineers developed 72 animated pictograms representing 24 GI symptoms across three severity levels (mild, moderate, severe), hosted on a web-based platform. "Figure 1. Samples of 4 out of the 72 developed pictograms."

Phase 1. Content Validity: 12 international experts across gastroenterology, geriatrics, linguistics, and neurodegenerative diseases independently rated each pictogram using a structured 5-point Likert scale across five domains: (1) medical alignment, (2) representational accuracy, (3) severity discrimination, (4) misinterpretation risk, and (5) cultural suitability.

Phase 2. Expert Face Validity: The refined tool was subsequently rated by experts across five design domains: (1) appropriateness of pictogram design, (2) size, (3) color, (4) animation speed, and (5) ease of understanding.

Phase 3. Patient Face Validity: Piloting with 30 subjects (upper and lower GI patients, cognitively normal and impaired) assessed: animation speed, pictogram size, color, risk of misinterpretation, and overall understanding.

Results: Content validity yielded a mean expert consensus score of 4.0 ± 0.5 across all five content domains. Expert face validity scored 3.6 ± 0.6 , guiding iterative refinements. Following revisions, patient face validity improved to 4.2 ± 0.4 , reflecting clarity and acceptability across both cognitively normal and impaired participants.

Conclusions: GAP is the first animated pictogram-based tool for GI symptom reporting and functional disorder diagnosis, purpose-built to overcome communication barriers in cognitively impaired patients. Robust content and face validity have been established; a multicenter international validation study is underway to confirm superiority over traditional questionnaires and cement GAP as the gold standard for GI symptom assessment. Future AI-assisted diagnosis integration will enable automated pattern recognition.

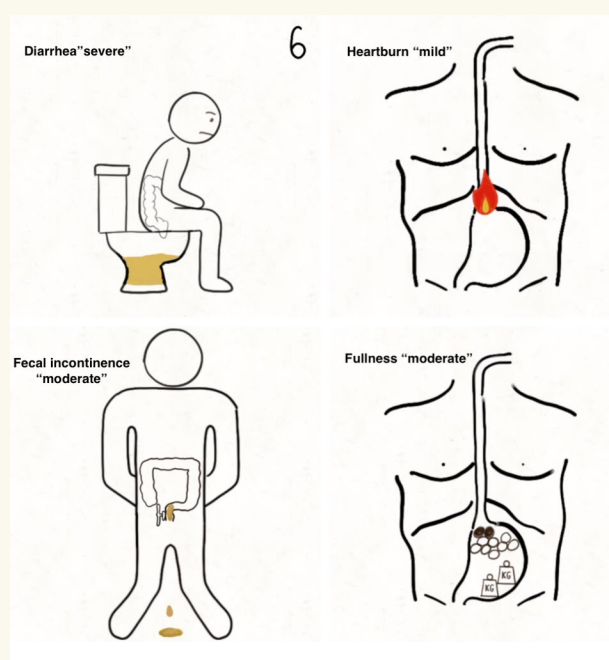


Figure 1. Samples of 4 out of the 72 developed pictograms.

ABSTRACT CODE: IBS25246-81 - POSTER BOARD NO. 59

Fecal Calprotectin as a Mediating Biomarker Linking Intestinal Barrier Dysfunction to Diarrhea Severity in IBS-D

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Background: Irritable bowel syndrome (IBS) is a heterogeneous disorder in which low-grade inflammation and impaired intestinal barrier function may contribute to symptom generation, particularly in diarrhea-predominant (IBS-D) and mixed-type (IBS-M). However, the clinical relevance and interplay between barrier dysfunction, inflammation, and symptom severity remain unclear.

Objectives: To evaluate the associations between fecal calprotectin (FC), impaired intestinal barrier function, and symptom severity, and to examine whether FC mediates the relationship between barrier-related signaling and diarrhea severity.

Design: This cross-sectional post-hoc analysis included Rome IV-defined IBS-D/M patients with moderate-to-severe symptoms. FC was measured as an inflammatory biomarker, and soluble syndecan-1 (SDC-1) as a marker of epithelial barrier perturbation. Symptom severity was assessed using validated questionnaires [IBS Symptom Severity Scale (IBS-SSS) and Visual Analogue Scale (VAS)].

Results: Sixty-seven patients were included (IBS-SSS 343±91.2). Elevated FC (>50 µg/g) was observed in 44.8%. FC levels were higher in IBS-D compared with IBS-M ($p=0.067$). FC correlated with diarrhea severity ($\rho=0.320$, $p=0.008$) more strongly in IBS-D ($\rho=0.417$, $p=0.005$) and with symptom impact on well-being ($\rho=0.299$, $p=0.014$), SDC-1 ($\rho=0.273$, $p=0.041$), and CRP ($\rho=0.240$, $p=0.049$). Patients with elevated FC demonstrated greater diarrhea burden and symptom impact. Among IBS-D patients, the association between SDC-1 and diarrhea severity was mediated by FC (indirect effect: $\beta=0.27$, 95% CI [0.04, 0.53]).

Conclusion: In IBS-D, barrier-related signaling is statistically associated with diarrhea severity only in the presence of low-grade inflammatory activity. These findings support further prospective evaluation of biomarker-defined IBS-D subsets to determine whether inflammatory or barrier-related pathways are clinically modifiable.

ABSTRACT CODE: IBS25623-80 - POSTER BOARD NO. 60

Gut Microbiota Signatures Differentiate Patients with Constipation-Predominant and Diarrhea-Predominant Irritable Bowel Syndrome

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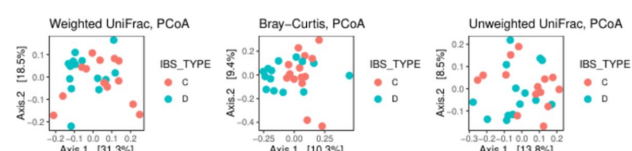
Aims: Irritable bowel syndrome (IBS) is a disorder of the gut-brain interaction (DGBI) in which changes of the gut microbiota may contribute to the different phenotypic form, mainly constipation-predominant (IBS-C) and diarrhea-predominant (IBS-D). However, baseline microbiome differences between them remain inadequately characterized. Aim of this study was to describe the baseline intestinal microbiota profile in IBS-C and IBS-D patients at baseline, assessing both diversity and bacterial composition.

Methods: Fecal samples from 50 consecutive patients with IBS (according to Rome IV criteria) and prior to any recent specific microbiota-directed treatment (antibiotics, probiotics), underwent 16S rRNA V3-V4 sequencing (Illumina MiSeq). The intestinal microbiota was analyzed by sequencing and subsequent bioinformatic processing, with calculation of alpha-diversity (Observed and Shannon) and betadiversity indices. Community structure was explored by principal coordinates analysis (PCoA) on Weighted UniFrac, Unweighted UniFrac and Bray-Curtis distances to compare global patterns between IBS-C and IBS-D. Taxonomic abundance differences between IBS-C and IBS-D subtypes were assessed using a DESeq2-based approach.

Results: Alpha diversity did not differ between IBS-C and IBS-D (Observed $p = 0.35$; Shannon $p = 0.29$). Betadiversity analysis revealed a modest but significant compositional separation using Bray-Curtis ($p = 0.045$), while weighted UniFrac showed a trend ($p = 0.054$) and unweighted UniFrac was not significant. (Figure 1) DESeq2 identified phenotype-specific microbial signatures: differential abundance analysis demonstrated distinct compositional patterns, involving in particular genera such as Akkermansia, Bacteroides, Blautia, Collinsella and Enterococcus. IBS-C was enriched in Firmicutes taxa, including Enterococcus, Holdemania, Lactococcus, Streptococcus, and several Lachnospiraceae and Ruminococcaceae Amplicon Sequence Variants (ASVs). On contrast, IBS-D showed higher abundance of Prevotella, Akkermansia, Bacteroides, and additional Bacteroidetes- and Verrucomicrobia-associated ASVs. (Figure 2)

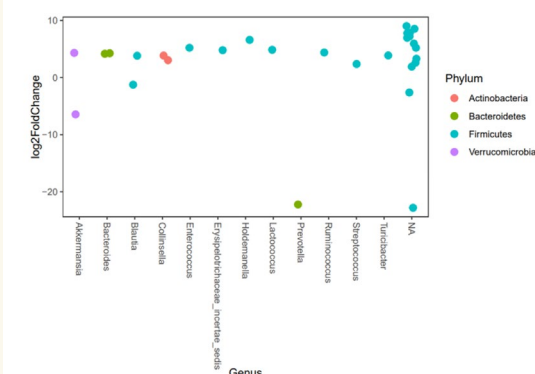
Conclusion: In IBS-C and IBS-D patients intestinal microbiota shows a largely overlapping global structure, with more subtle differences at the level of specific taxa rather than in overall diversity, driven primarily by differential abundance of metabolically relevant Firmicutes and Bacteroidetes/Verrucomicrobia taxa. These findings suggest that the distinction between constipation-predominant and diarrheapredominant phenotypes is driven by a quantitative shift in selected bacterial components, which may be relevant to symptom pathophysiology and to the future personalization of microbiotatargeted therapies.

Figure 1



Note: The differences in the entire microbial community between patients with IBS-C and IBS-D were analyzed through an ordination analysis of Principal Coordinates Analysis (PCoA) and three different methods for calculating dissimilarity (Weighted UniFrac, Unweighted UniFrac, and Bray-Curtis)

Figure 2



ABSTRACT CODE: IBS25624-81 - POSTER BOARD NO. 61

Promotion and Monitoring of Physical Activity with a Digital App in Patients with Irritable Bowel Syndrome: Clinical Outcomes and Fecal Microbiota Analysis of a Randomized Controlled Study

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Aims: Physical activity (PA) improves irritable bowel syndrome (IBS) symptoms.

Aim of this RCT was to evaluate the effects on IBS of PA prescription with a mobile App and PA effects on gut microbiota.

Methods: We enrolled 97 consecutive patients with IBS (Rome IV); 22 patients aged <18/>60 years or with comorbidities limiting PA were excluded.

Patients were randomized to two groups: 1) (Not APP) PA prescription with a 10 min counselling or 2) (APP) PA prescription with indication to use the mobile App Google Fit after a brief explanation. Patients were evaluated at T0 and T3 (3 months). IBS-SSS and SAGIS were evaluated. The adherence to WHO PA guidelines and PA levels were measured as MET minutes per week (IPAQ-SF).

Microbiota analysis on stool was performed at T0 and T3 in a group of 50 patients.

A metataxonomic analysis of fecal samples collected from IBS patients; 16S rRNA gene amplification, library preparation and pair-end sequencing on the Illumina MiSeq platform; MICCA pipeline (v.1.7.2).

Results: Seventy-five patients with IBS (mean age 41, SD±11.7 years; 70% female) were randomized. No difference at baseline, 3 dropped among Not APP. The improvement in IBS-SSS (88.2±67 vs 47.6±72.0, P=0.021) and in SAGIS total score (9.2±8.7 vs 4.1±8.7, P=0.021) was greater for APP (Fig.1). Although PA increased in both groups, the increase was greater in the APP (MET min global activity at IPAQ-SF=791±1026 vs 262±807; P=0.025). The increase of PA was significantly correlated with the improvement of IBS-SSS (r=0.33, P=0.03). (Fig.2) Changes in the gut microbiota composition were observed in IBS patients at T0 and T3. While alpha diversity showed no significant differences between groups (Wilcoxon sum rank test, p>0.05), beta-diversity showed significant differences in the microbial community structure (PERMANOVA p=0.001). Specific genera were differentially enriched post-treatment. At the species level, in-depth analysis by using DESeq2 identified different significantly enriched bacterial ASVs. (Fig.3)

Conclusion: A digital APP promoting PA improved symptoms and exercise levels compared to PA counselling alone. Gut microbiota plays a role in symptom improvement, though it is not the sole driver. Increased PA may help shape microbial changes to improve IBS symptoms.

Figure 1

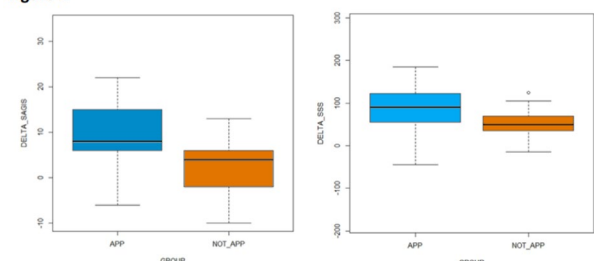


Figure 2

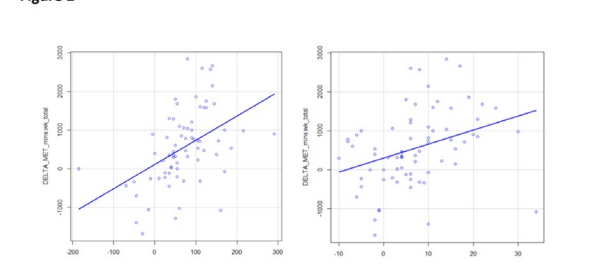
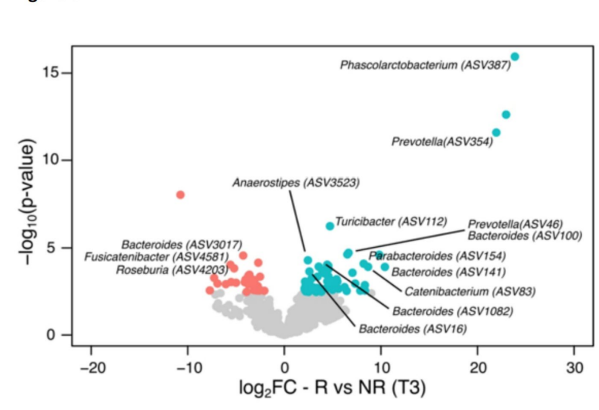


Figure 3



ABSTRACT CODE: IBS25605-80 - POSTER BOARD NO. 62

The genetic architecture of constipation in 2.3 million individuals

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Objective: Constipation is a common gastrointestinal (GI) condition, and a hallmark of irritable bowel syndrome. We aimed to characterize its genetic architecture and identify actionable biological mechanisms to support future clinical translation.

Methods: We performed a genome-wide association study (GWAS) meta-analysis of constipation in 2,301,328 individuals of European ancestry from 16 international biobanks. Single-nucleotide polymorphism (SNP)-based heritability (h²SNP) and genetic correlations with other traits were estimated, and Mendelian randomization (MR) was adopted to test causal relationships. GWAS results were functionally annotated and fine-mapped to prioritize relevant tissues, cell types, biological pathways, candidate genes, molecular mechanisms, and potential drug targets.

Results: Constipation showed significant heritability, albeit modest (h²SNP=4.67%). Strong genetic correlations were observed with multiple conditions and traits across the gastrointestinal, psychiatric, and cardiovascular (CV) domains. MR analyses indicated causal relationships with these traits, including directional effects from constipation on CV risk. Gene set enrichment analyses based on a nearest-gene approach pointed to mechanisms and pathways relevant to the central nervous system and neurodevelopment. Similar cell-type enrichment analyses revealed pivotal roles of constipation-associated genes in enteroendocrine cells from several regions of the human GI tract. Drug target analyses highlighted compounds related to endocrine therapy, agents acting on cardiac tissue, and antipsychotics. Among the 38 independent GWAS risk loci identified, 10 were fine-mapped to a single putative causal variant with high confidence (>75% probability). Several loci with fine-mapped signals have previously been associated with CV diseases and traits, and may be involved in the control of gut motility and signaling along the gut-brain axis. Prioritized genes include SLC39A8 (linked to blood pressure and Crohn's disease), HAND2 (a key regulator of cardiac development and essential for enteric neurodevelopment and gut motility) and DPP10 (a modulator of potassium channel activity).

Conclusions: In the largest GWAS meta-analysis of its kind, constipation shows a complex genetic architecture shared with other complex traits and appears to be genetically upstream of CV disease risk. Our findings provide mechanistic insights, highlighting actionable pathways and novel opportunities for translational investigation.

ABSTRACT CODE: IBS25653-83 - POSTER BOARD NO. 63

Towards clinical translation of preclinical innovation in intraluminal electrophysiology

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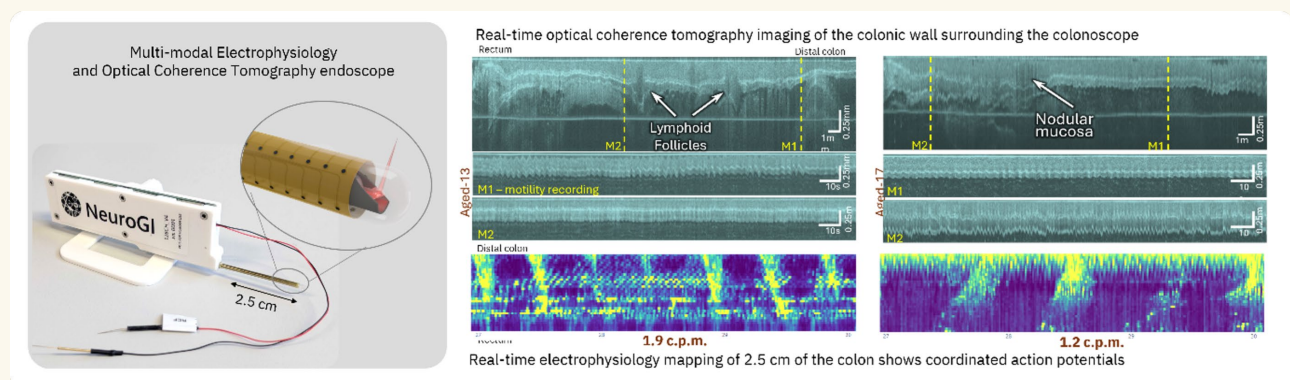
((1) Wyss Center for Bio and Neuroengineering, Geneva - Switzerland, (2) University Hospital of Geneva, Geneva - Switzerland, (3) Inserm TENS, Nantes - France

Objective: The clinical need for functional measurements of the digestive system, particularly in the colon, calls for technological innovation driven by clinician input. We have demonstrated in small animal models that intraluminal electrophysiology using a mini colonoscope is feasible and enables a new approach to assessing colonic physiological function. Translating intraluminal electrophysiology measurements to humans, however, is highly challenging due to colonic anatomy and continuous motility.

Methods: We have developed a semi rigid mini endoscope for intraluminal measurements of electrophysiology and morphology in anesthetized small animals (Fig). The device has an outer diameter of 2 mm and an insertion length of 3 cm, and enables high resolution spatiotemporal mapping of colonic electrical activity. Simultaneously, optical coherence tomography provides assessment of tissue contact, motility, and internal morphology.

Results: We present combined electrical activity, optical motility, and morphological measurements obtained in mice (Fig). The system allows longitudinal monitoring of functional and structural changes before and after disease model induction, reducing the number of animals required per study. Its high spatial and temporal resolution enables advanced quantitative analyses and provides new insights into gut physiology in vivo. Achieving comparable resolution in humans would require extremely complex engineering that, while technically feasible, is unlikely to be translatable to clinical practice. Instead, we propose a solution based on fewer recording points capable of continuous intraluminal monitoring over multiple digestive cycles. This approach aims to capture physiological function under conditions minimally disturbed by colonoscopy itself.

Conclusions: We believe that intraluminal electrophysiology has the potential to transform the understanding of functional gut disorders, in a manner analogous to how Holter monitoring enabled the diagnosis of intermittent cardiac events. Building on preclinical evidence, we are advancing toward translation to a human grade prototype. However, to ensure meaningful clinical impact we propose to roll out a survey of unmet clinical needs in neurogastroenterology that will help stimulate and guide innovation.



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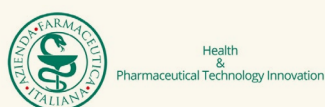
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