

PLANT-BASED DIET FOR MAINTAINING REMISSION IN ULCERATIVE COLITIS 12-MONTH RANDOMIZED CONTROLLED TRIAL

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DDW2026
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MAY 2-5, 2026 | CHICAGO, IL

EXHIBIT DATES: MAY 3-5, 2026

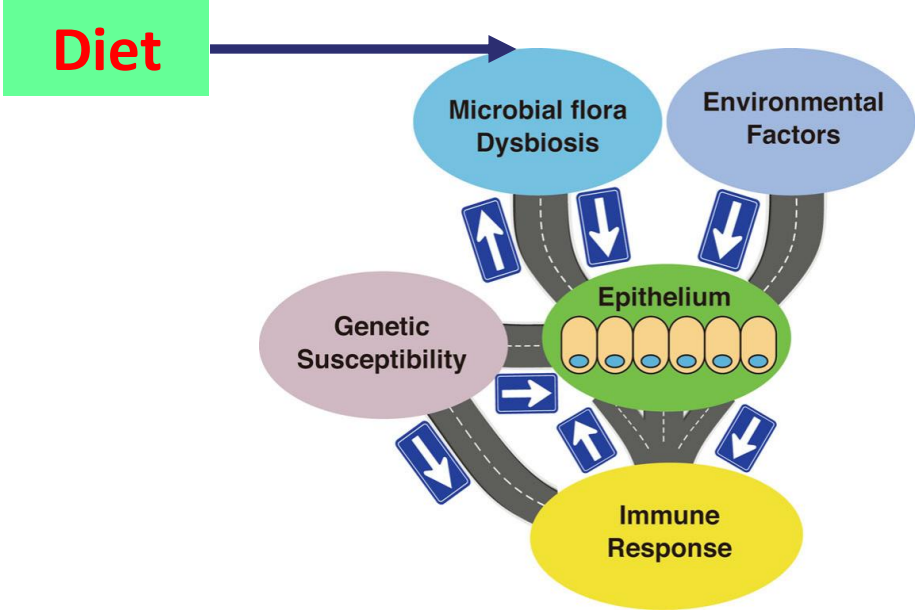
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SPEAKER DISCLOSURE

No disclosures

All authors declare no relevant financial relationships or conflicts of interest.

DIET IN IBD



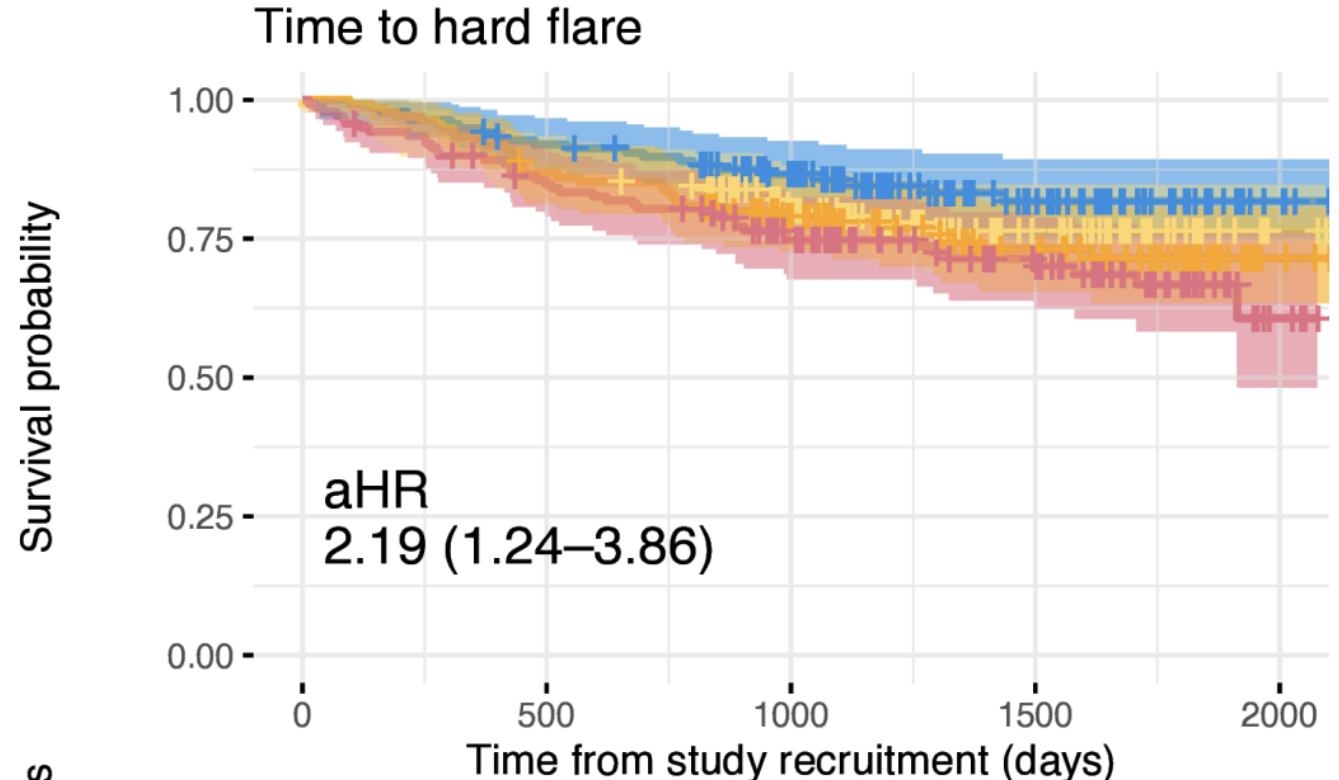
Okamoto, R et al. J Gastroenterol. 2016

State of IBD	Optimal nutritional approach
 IBD	Mediterranean diet* *UC: decrease in red and processed meat may reduce flares
 Stricture IBD	✓ • Soluble fiber • Cooked/steamed • Peeled • Mashed/blended vegetables • Chew well ✗ • Roughage (indigestible fiber) • Unpeeled apples • Broccoli • Lettuce • Corn
 Inflamed CD	✓ EEN (oral or tube feeds) or ✓ CDED: PEN + modified oral diet → ✓ Clinical remission ✓ Endoscopic remission

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WHAT DO WE KNOW?

- 1259 UC, stratified by meat protein intake
- Higher objective relapse rates



WHAT DO WE KNOW?

Intervention	Study	Population	Result
Lacto-ovo semi-vegetarian plant-based diet (PBD) plus standard care	Chiba, et al (Japan, 2019) Prospective study	92 mild-severe UC	<u>Relapse rates were lower</u> after induction therapy
Vegetarian diet	Schreiner (Sweden, 2019) Retrospective study	52 IBD	<u>No differences in disease activity</u> , hospitalization or surgery rates Gut microbiota composition was significantly different vs omnivores.
Plant-based diet score	Nikniaz (Iran, 2024) Cross sectional study	158 UC	Higher PBD score associated with <u>lower disease activity</u>

	Land Animals	Fish & Seafood	Eggs	Dairy
Lacto-Ovo Vegetarian				

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AIMS AND OBJECTIVES

- To evaluate the efficacy of a plant-based diet for maintaining remission in ulcerative colitis, and to examine its association with changes in the gut microbiome.

STUDY DESIGN

- Single-centre, open-label, randomized clinical trial

Patient	• Adults with UC in remission
Intervention	• Plant-based diet (PBD) + SMT
Control	• Usual diet (UD) + SMT
Outcome	• Clinical relapse and gut microbiome alterations
Timing	• 12 months

INCLUSION AND EXCLUSION CRITERIA

Inclusion criteria	Exclusion criteria
Age 18-80 years	Prior colectomy or subtotal colectomy
Simple Clinical Colitis Activity Index (SCCAI) score of 0-2 in preceding 3 months	Topical steroids in last 2 weeks
Faecal calprotectin (FCP) < 150 mcg/g	Oral antibiotics in last 4 weeks
No systemic corticosteroid in the last 6 month	Pregnancy
Stable doses of maintenance: 5-ASA agents for at least 4 weeks, thiopurines for 3 months	COPD and ischemic heart disease

INTERVENTION

Plant-based diet (PBD):

Avoid

Dairy
products,
except curd

White and red
meat

Refined sugars
and processed
food

Gluten-
containing
cereals

Eggs and fish

Usual diet (UD)

Habitual, unrestricted diet
No prescribed changes

MONITORING DIETARY ADHERENCE – PBD SCORE



Intake	6-7 days/ week	3-5 days/ week	1-2 days/ week	Rare (<1/week)
Food items recommended				
Green leafy vegetables	5	3	1	0
Roots and tubers	5	3	1	0
Cruciferous vegetables	5	3	1	0
Fruits	5	3	1	0
Pulses	5	3	1	0
Cereals and grains	5	3	1	0
Fermented food items	5	3	1	0
Spices, nuts and seeds	5	3	1	0
Food items avoided				
Meat, fish	-5	-3	-1	0
Poultry, eggs	-5	-3	-1	0
Milk products	-5	-3	-1	0
Gluten-based grains	-2	-1	0	0
Refined flour products	-5	-3	-1	0
Packaged foods	-5	-3	-1	0
Alcohol	-5	-3	-1	0

AIIMS IBD Diet mobile application
(IBD Nutricare)

OUTCOME MEASURES

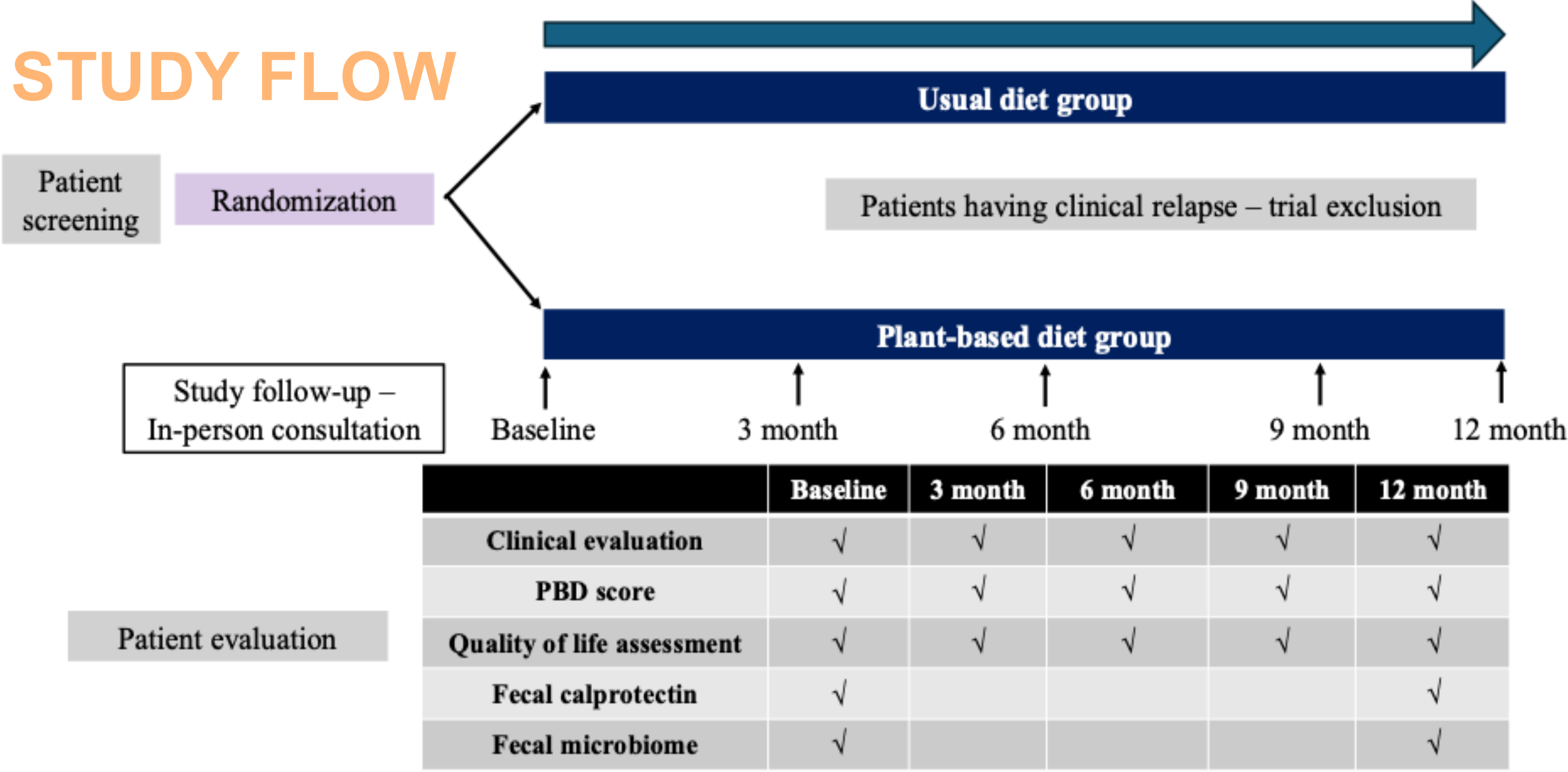
- **Primary outcomes**

- Clinical relapse within 12 months (SCCAI >2)
- Gut microbiome changes at 12 months

- **Secondary outcomes**

- Health-related quality of life (Short IBD Questionnaire) at 12 months

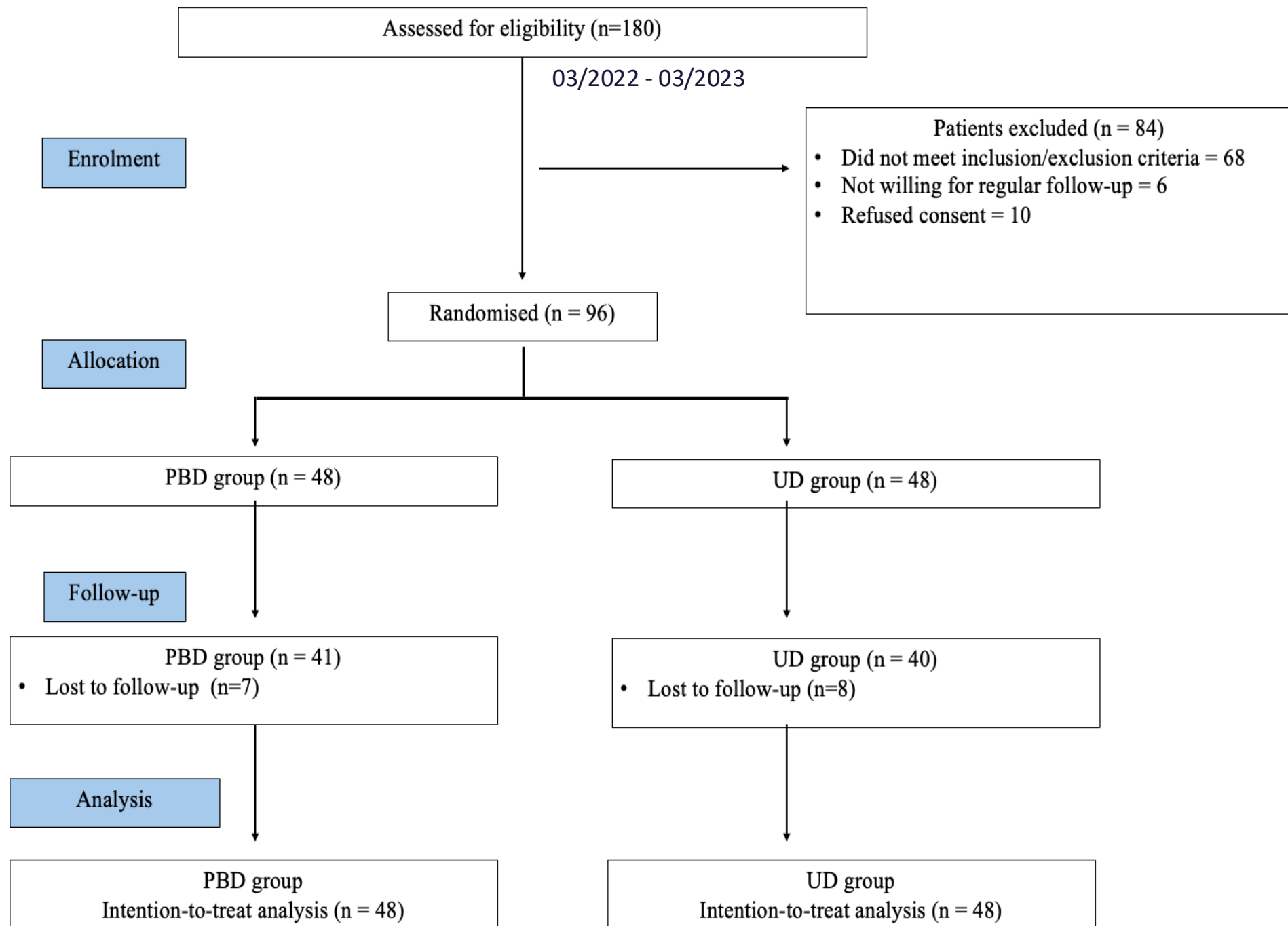
STUDY FLOW



SAMPLE SIZE CALCULATION

- Risk of relapse among UC in remission: 19%
- Risk of relapse with PBD among UC in remission: 2% (Delta 17%)
- Sample size of 43 patients in each arm (Power 80%, $\alpha = 0.05$)
- Dropout rate of 10%, total 96 patients required (48 each arm)

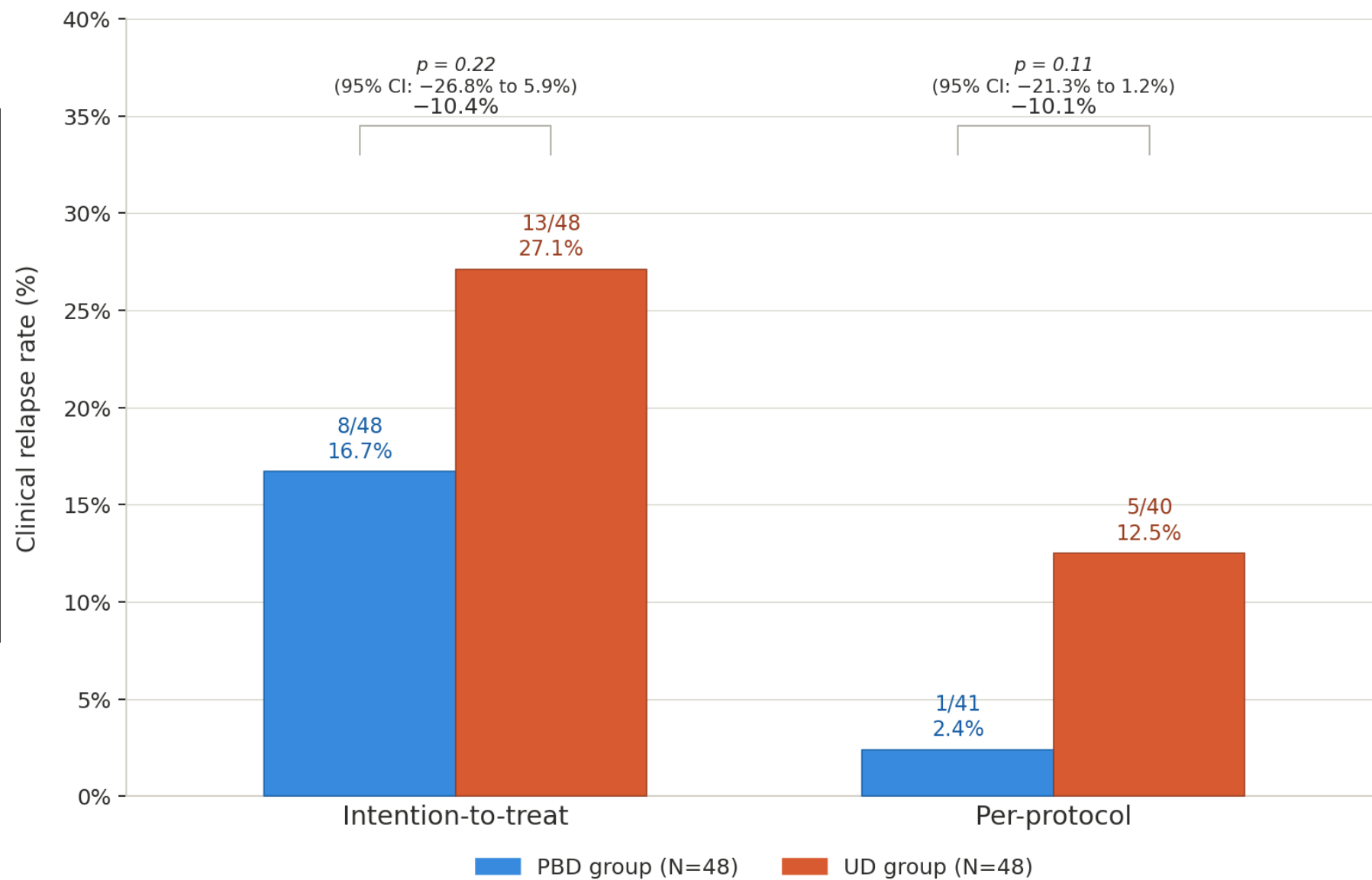
RESULTS



Characteristic	PBD group (N=48)	Usual diet group (N=48)
Age (years)	38.0±12.2	40.2±11.6
Male sex	31 (64.6)	39 (81.3)
Duration of disease (years)	6 (3, 10)	6.5 (4, 9.2)
Extent of disease		
• Proctitis (E1)	8 (16.7)	4 (8.3)
• Left colitis (E2)	29 (60.4)	28 (58.3)
• Extensive colitis (E3)	11 (22.9)	17 (35.4)
Therapy		
• Oral 5-ASA	47 (97.9)	47 (97.9)
• Topical 5-ASA	21 (43.8)	25 (52.1)
• Prior oral steroids	16 (33.3)	22 (45.8)
• Azathioprine	10 (20.8)	13 (28.2)
• Advanced therapy	0 (0)	0 (0)
Prior acute severe ulcerative colitis	5 (10.4)	13 (27.1)
Biochemical parameters		
• Albumin (g/dL)	4.7 (4.3, 4.8)	4.6 (4.2, 4.9)
• CRP (mg/L)	1.0 (0.6, 2.1)	0.7 (0.4, 2.4)
Faecal calprotectin (mcg/g)	32.3 (29.9, 38.9)	32.3 (31.9, 62.9)

PRIMARY OUTCOME

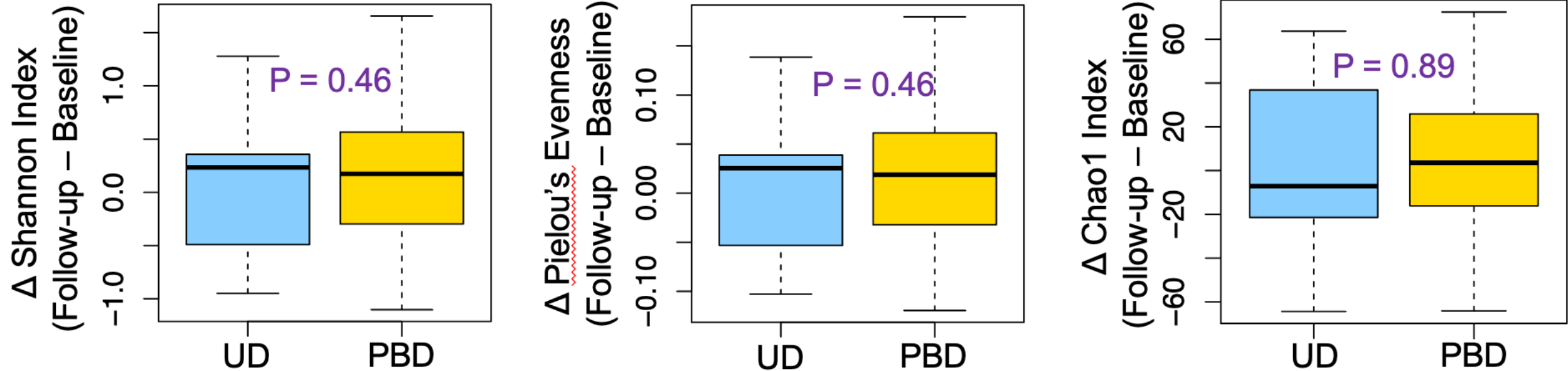
Rates of clinical relapse — primary outcome



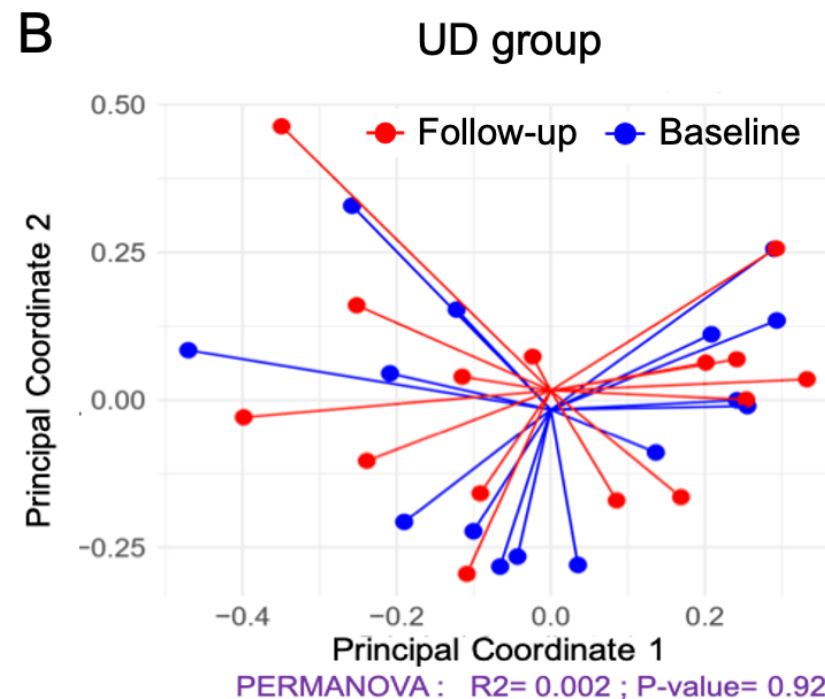
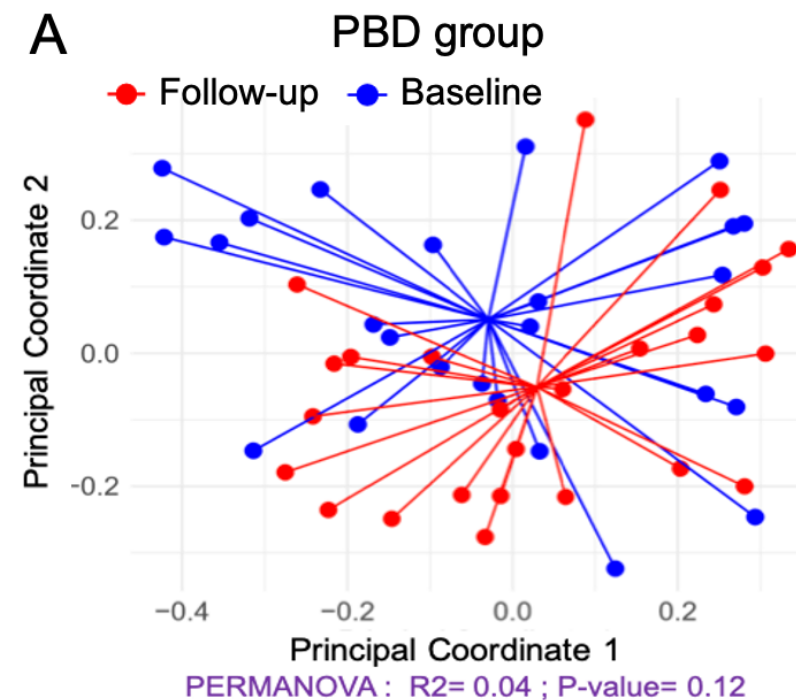
ADHERENCE AND MICROBIOME

- 25 patients in PBD group had $\geq 70\%$ adherence
- Microbiota assessment was restricted to these
- Compared with 15 age-, sex-, and treatment-matched patients in the UD group

CHANGES IN GUT MICROBIOME



Change in alpha diversity did not differ significantly between the PBD and usual diet groups



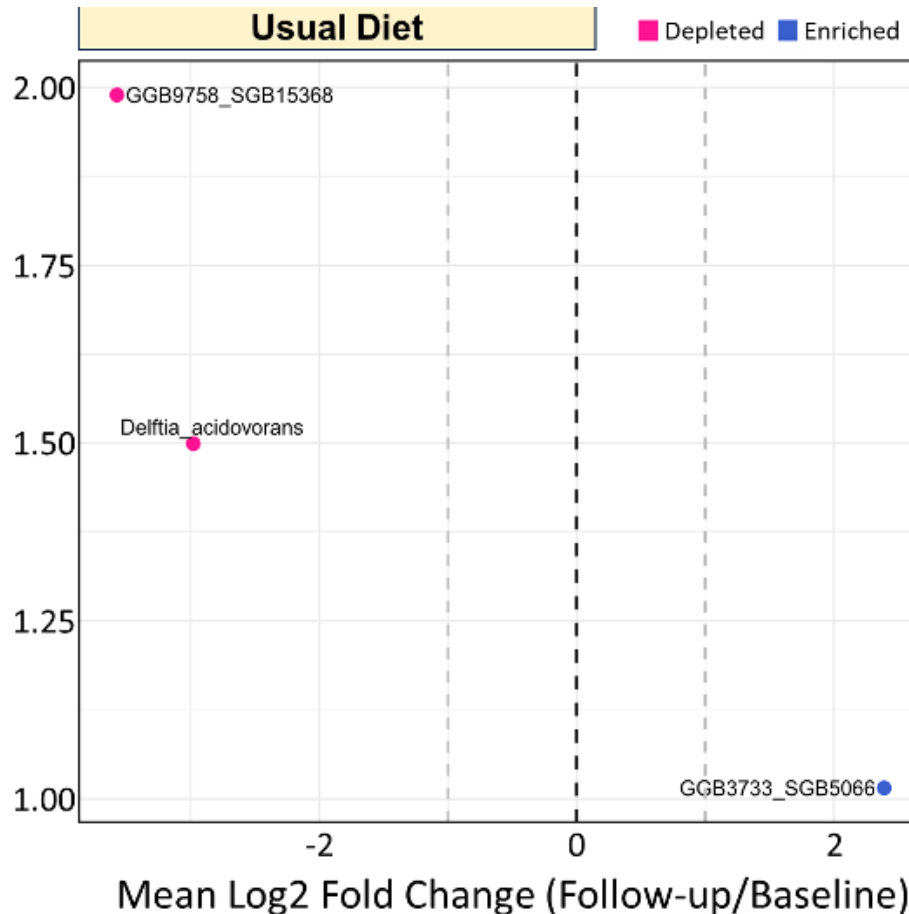
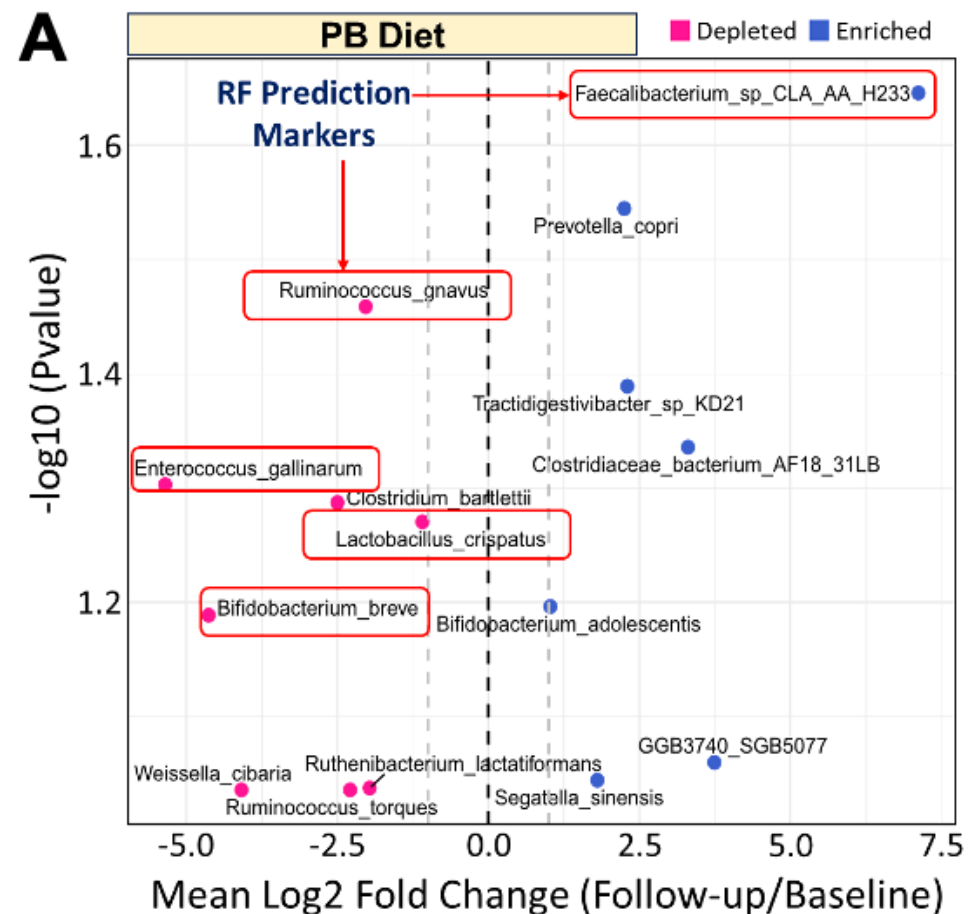
Non-significant trend ($p=0.1$)
towards microbiome
composition shift in the PBD
group alone

C PERMANOVA (Beta-Diversity v/s Metadata)
All Time-points

Distance measures	All Time-points									
	Bray-Curtis				Kendall					
	PBD Score	Diet group	Disease extent	Gender	Age	Prior ASUC	Hemoglobin	Albumin	CRP	FCP
	■ $P \leq 0.05$	■ $P \leq 0.05$	■ $P \leq 0.05$	■ $P \leq 0.05$	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS
	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS	■ NS

Beta diversity (Bray-curtis) was
associated with PBD score and
disease extent

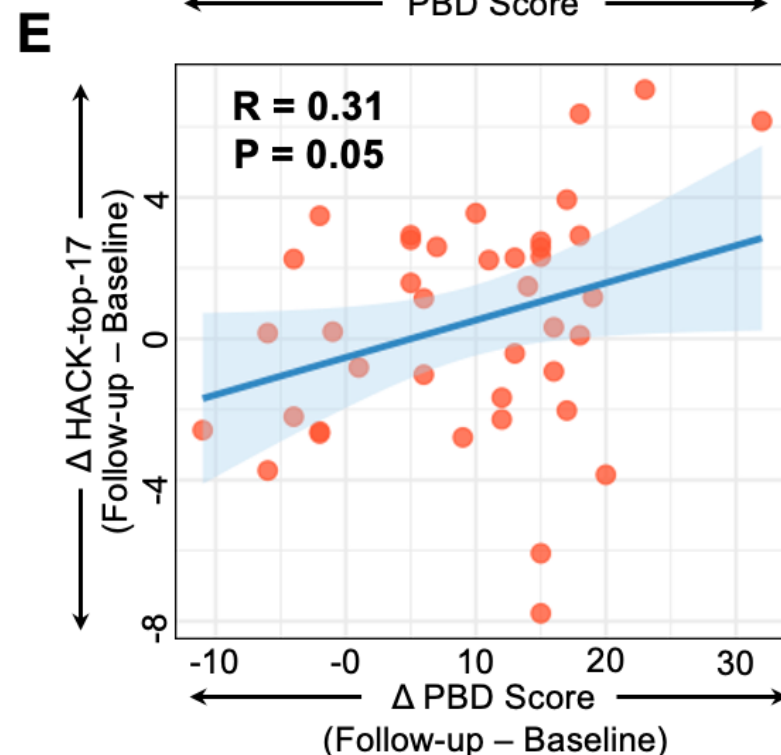
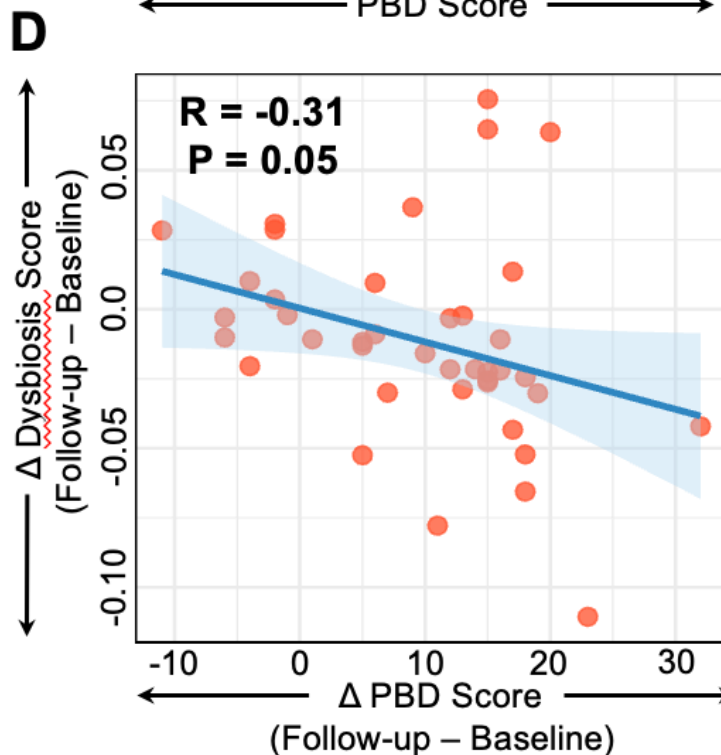
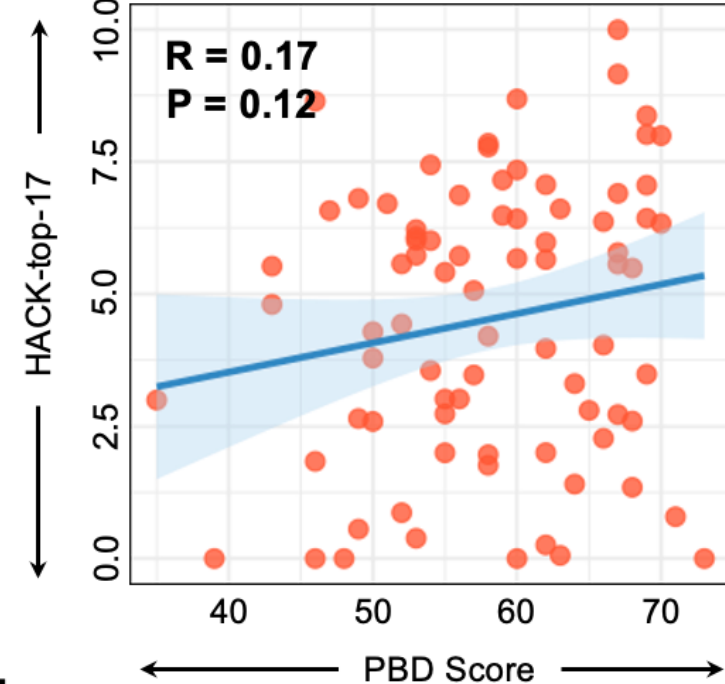
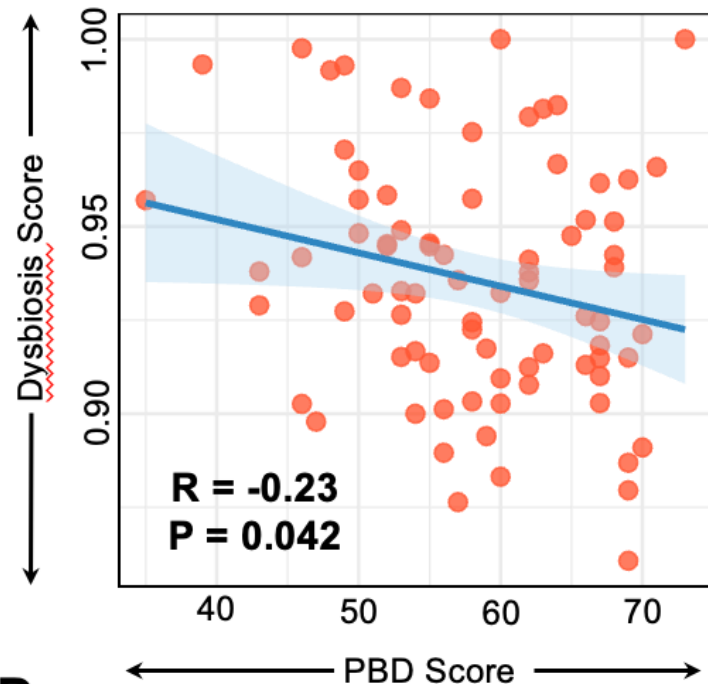
MICROBIAL TAXA ASSOCIATED WITH ADHERENCE TO PBD



- PBD group
- **Faecalibacterium** lineage (anti-inflammatory)
 - **Prevotella copri** (core Indian gut taxon)
 - **Ruminococcus gnavus** and **Enterococcus** species (pro-inflammatory)
 - Specific **Lactobacilli** and **Bifidobacteria**
- Usual diet group
No change

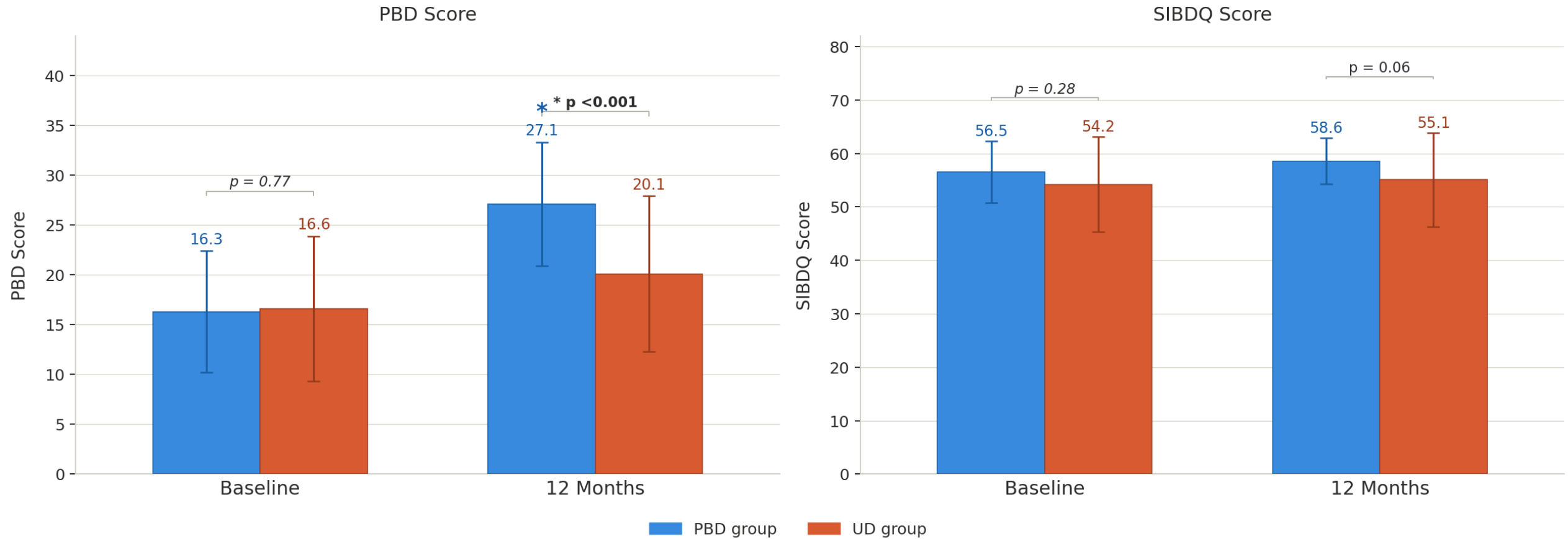
PBD SCORE

- Dysbiosis Score showed a significant negative association with PBD scores
- HACK-top-17 score showed a non-significant positive association



SECONDARY OUTCOMES

PBD Score and SIBDQ — Baseline vs 12 Months



ADVERSE EVENTS

Study follow-up	3 months			6 months			9 months			12 months		
Adverse event	PBD	UD	P-value	PBD	UD	P-value	PBD	UD	P-value	PBD	UD	P-value
Pain abdomen	1 (2.4%)	2 (5%)	0.62	0 (0%)	2 (5.3%)	0.23	0 (0%)	1 (2.7%)	0.47	1 (2.5%)	1 (2.8%)	1
Bloating	2 (4.9%)	1 (2.5%)	1	1 (2.4%)	6 (15.8%)	0.051	0 (0%)	2 (5.4%)	0.22	1 (2.5%)	0 (0%)	1
Nausea	1 (2.4%)	0 (0%)	1	1 (2.4%)	0 (0%)	1	0 (0%)	0 (0%)	-	1 (2.5%)	0 (0%)	1
Fever	1 (2.4%)	1 (2.5%)	1	0 (0%)	0 (0%)	-	1 (2.4%)	0 (0%)	1	1 (2.5%)	0 (0%)	1

DISCUSSION

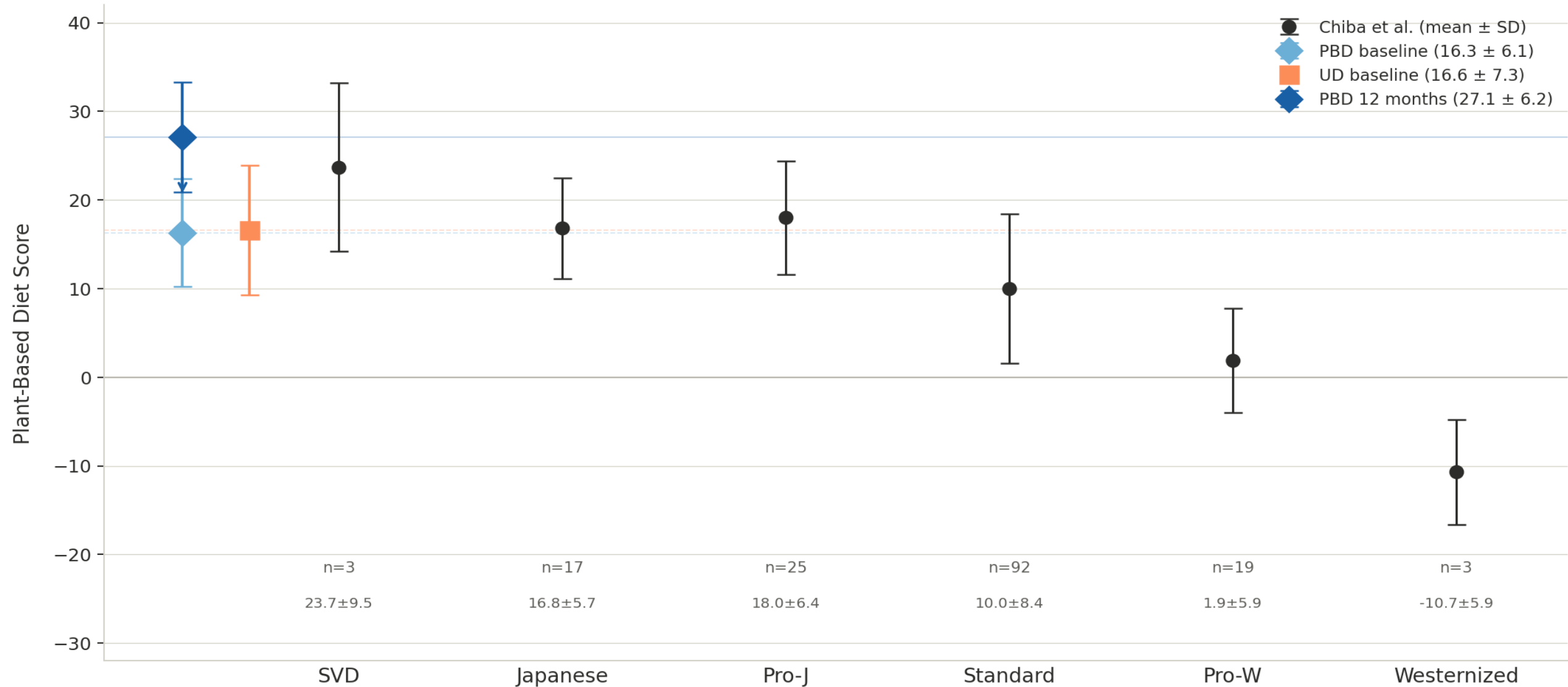
- One of the largest randomized evaluations of a dietary intervention in UC
- Utilizes whole-genome sequencing to bridge the gap between dietary intake and microbial function
- Dedicated mobile application for real-time dietary logging, enhancing reliability of the adherence data

LIMITATIONS OF OUR STUDY

- Endoscopic assessment not performed
- Diet self-reported
- Longer follow-up period might have captured more clinical relapses
- Indian diet is typically vegetarian predominant and thus usual diet group also had baseline high PBD scores

LIMITATIONS: COMPARISON

Our PBD Scores in Context of Chiba et al. Dietary Patterns



CONCLUSIONS

- No statistically significant reduction in clinical relapse of UC in remission over 1 year
- PBD led to a significant increase in anti-inflammatory taxa alongside broader gut microbiome restructuring.
- Microbiome changes concordant with dietary adherence support biological activity of PBD
- Clinically meaningful effect size (10% benefit) and tolerability
 - Larger multicentre trials are warranted

THANK YOU!

**OPEN TO
QUESTIONS**

