

Introduction

Sensory testing with inflation of a rectal balloon is a standard component of anorectal manometry (ARM)

Its clinical value is controversial

Patients with irritable bowel syndrome (IBS) are traditionally thought to be hypersensitive to rectal balloon inflation

The **aim** of this study is to determine whether rectal hypersensitivity was a marker of IBS in a large cohort using multiple different technologies.

Methods and Materials

- Enrolled patients underwent ARM for chronic constipation
 - High resolution ARM
 - 3D ARM

- From July 2017 up to April 2022

Collected data

Demographics
Disease characteristics (according to Rome IV criteria)
Symptom severity (via Patient Assessment of Constipation Symptoms (PAC-SYM))

Psychological features including anxiety/depression (Hospital Anxiety and Depression Scale (HADS))

GI-specific anxiety (Visceral Sensitivity Index (VSI))

ARM sensitivity measurements

- First sensation
- Urge sensation
- Maximum tolerable volume
- Balloon Expulsion test (BET)

Methods and Materials

Hypersensitivity was defined as **volume perception less than the 50th, the 75th and the 90th percentile of the first sensation, urge sensation and maximum tolerable volume respectively**, in order to homogenize differences in HR and 3D ARM measurements.

Table 1. Demographic characteristics, disease severity, and psychological traits among those with functional constipation vs. irritable bowel syndrome with constipation (IBS-C).

	Functional Constipation (N=405)	IBS-C (N=51)	p-value
Age			
Mean (SD)	49.3 (17.7)	51.2 (16.0)	0.44
Sex			
Male	64 (15.8%)	12 (23.5%)	0.21
Female	341 (84.2%)	38 (74.5%)	
BMI	25.3 (5.68)	25.5 (5.83)	0.77
ARM Type			
3D	212 (52.3%)	29 (56.9%)	0.65
HR	193 (47.4%)	22 (43.1%)	
PACSYM score			
Total	2.75 (0.778)	3.04 (0.600)	0.02
Abdominal	2.76 (1.050)	3.42 (0.754)	<0.0001
Rectal	2.40 (0.865)	2.61 (0.770)	0.10
Stool	2.94 (0.935)	3.03 (0.884)	0.55
HADS score			
Anxiety	7.98 (4.81)	8.74(4.37)	0.26
Depression	4.67 (4.18)	5.29 (3.85)	0.20
VSI	35.0 (20.7)	48.7 (16.7)	<0.0001

Results

- N=456 patients (who met Rome IV criteria) (**Table 1**)
 - Mean age 49.5+/-17.5 years, 90.0% female
 - FC (n=405, 88.8%)
 - IBS-C (n=51, 11.2%)
 - Patients with IBS-C tended to have
 - more severe constipation symptom severity (driven by abdominal symptoms subscale) (by PACSYM total and abdominal subscore)
 - increased GI-specific anxiety (by VSI)
 - Patients with IBS-C and FC had the same
 - anxiety and depression scores (by HADS score)
 - rectal evacuation disorder (by prolonged BET)
 - proportion of hypersensitive patients regardless of percentile cutoff (**Figure 1**).
- Age, sex, anxiety, depression and GI-specific anxiety adjusted logistic regression:
 First sensation: OR 1.37 (95% CI 0.65-3.12), p=0.14
 Urge sensation: OR 0.98 (95% CI 0.46-2.17), p=0.95
 Discomfort sensation: OR 0.94 (95% CI 0.44-2.15), p=0.87

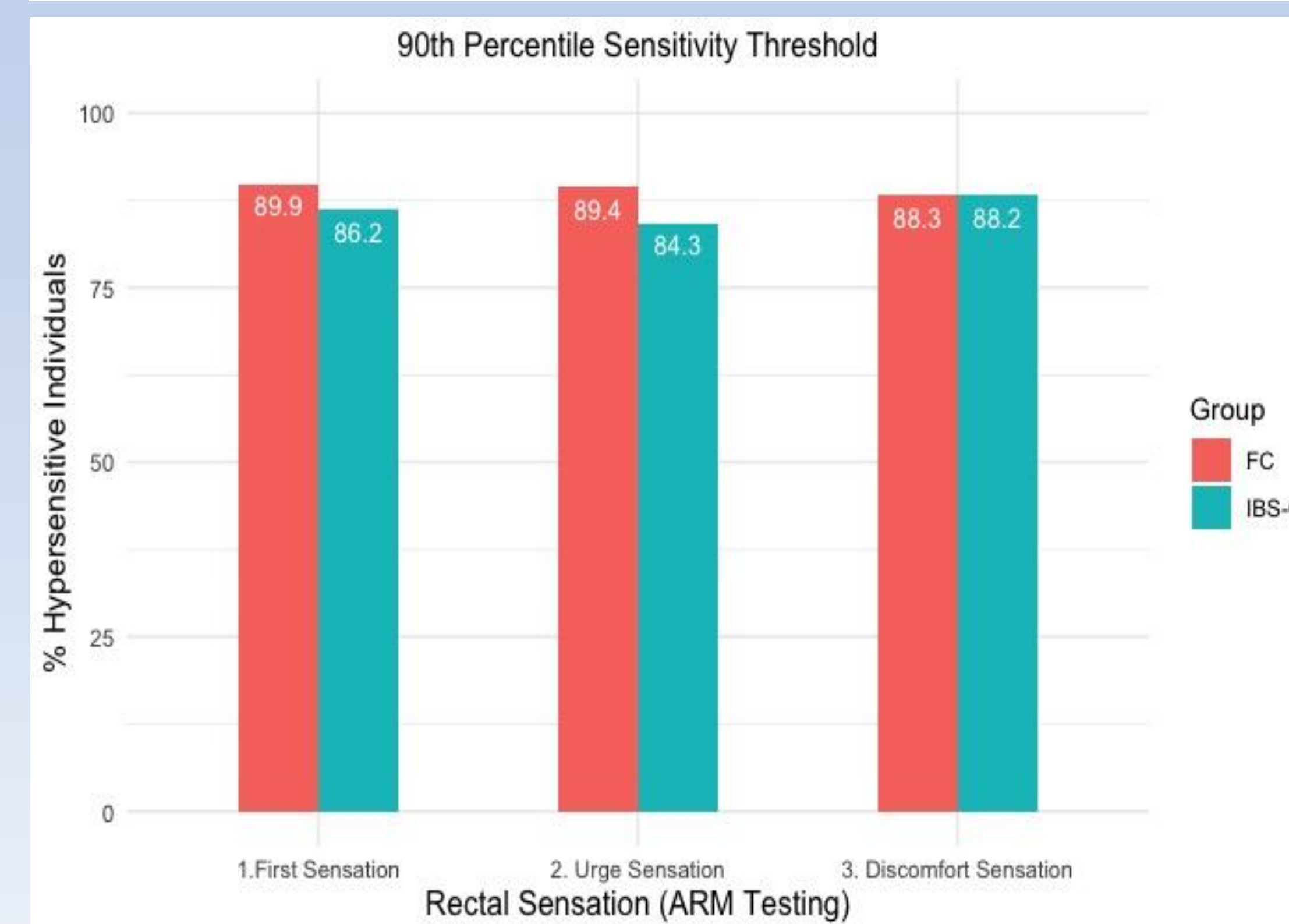
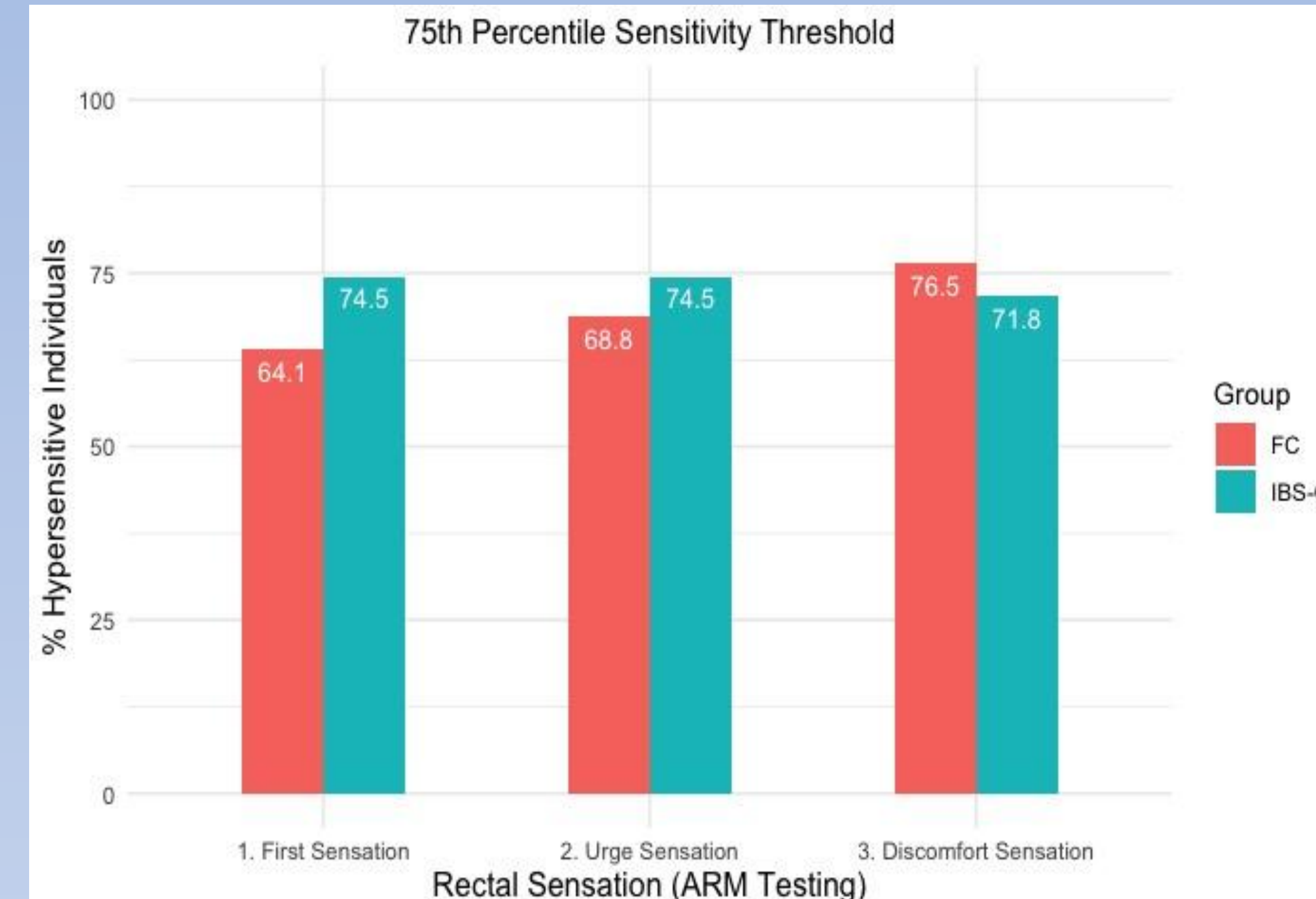
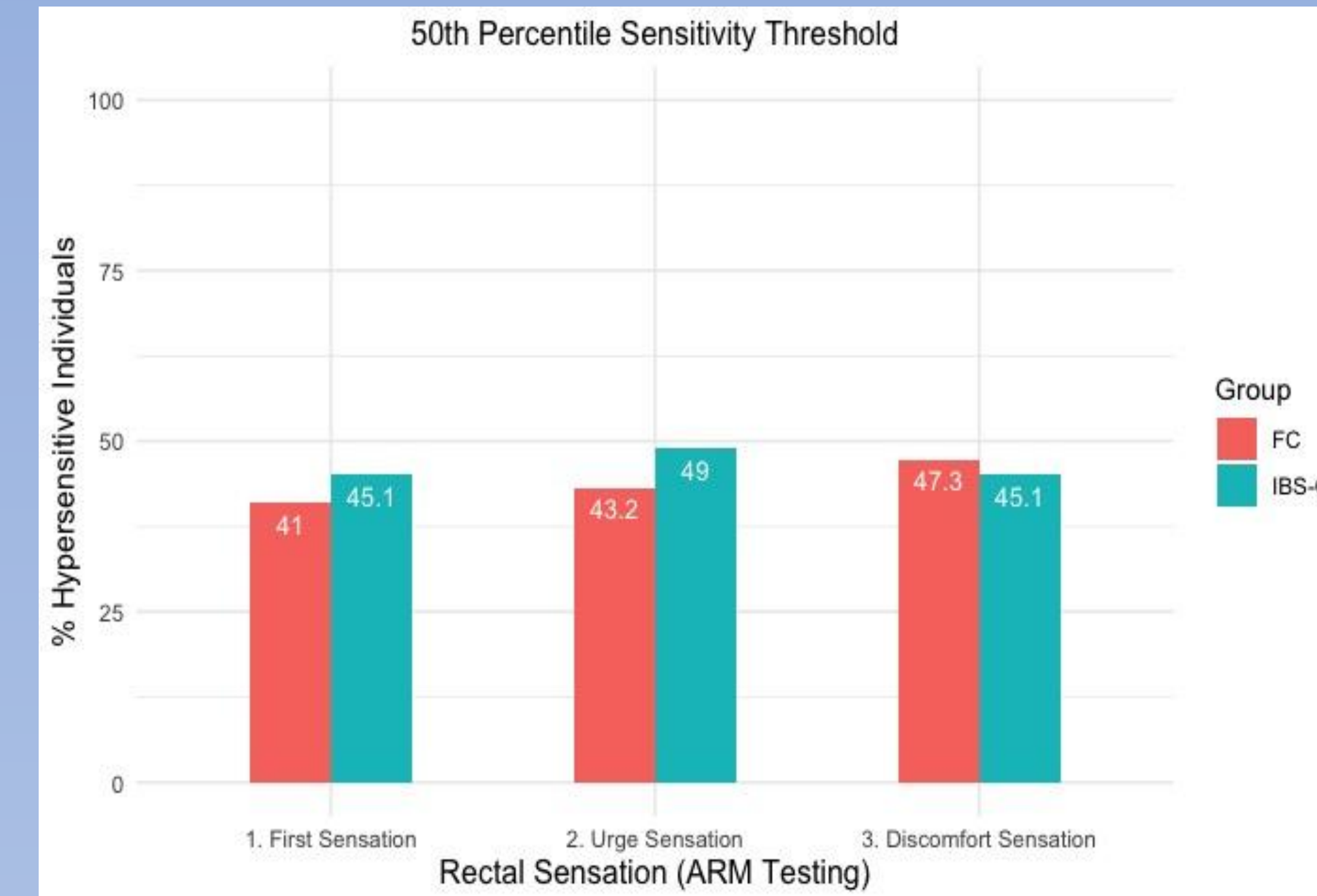


Figure 1. The first sensation, urge sensation and discomfort sensation in FC and IBS-C patients of a) 50th percentile, b) 75th percentile and c) 90th percentile.

Discussion

In this large cohort of patients undergoing ARM for chronic constipation, we found no evidence to support increased rectal sensitivity in IBS-C compared to FC patients.

Age, sex, anxiety (HADS-A), depression (HADS-D) and GI-specific anxiety (VSI) adjusted logistic regression confirmed the lack of association between hypersensitivity and presence of IBS-C.

The established belief of rectal hypersensitivity that may be a marker of visceral hypersensitivity is questioned on patients with IBS-C.

Although hypersensitivity is a major finding according to the London protocol, its importance in clinical care is recently questioned.

IBS-C and IBS-D may have a different underlying pathophysiology

IBS-C may be closer to FC than previously thought.

Conclusions

In this large cohort of patients undergoing ARM for chronic constipation, we found no evidence to support increased rectal sensitivity in IBS-C relative to FC. Clinical measurements of rectal sensation may not accurately reflect underlying visceral hypersensitivity thought to drive disease pathophysiology in IBS.

Contact

Artemis Trikola, MD
Massachusetts General Hospital
Email: atrikola@mgh.harvard.edu

References

- Carrington E v. et al. The international anorectal physiology working group (IAPWG) recommendations: Standardized testing protocol and the London classification for disorders of anorectal function. *Neurogastroenterol Motil.* 2020;32(1).
- PATIENT ASSESSMENT OF CONSTIPATION-SYMPTOMS QUESTIONNAIRE FOR USE WITH OIC.
- HADS
- Mazor Y et al. Volumetric Rectal Perception Testing: Is It Clinically Relevant? Results From a Large Patient Cohort. *AJG.* 2021;116(12):2419-2429.