PWE-083

ARE FUNCTIONAL CONSTIPATION AND CONSTIPATION-SUBTYPE IRRITABLE BOWEL SYNDROME DISTINCT WITH RESPECT TO 5-HYDROXYTRYPTAMINE SIGNALLING AND MOTOR-SENSORY FUNCTION?

doi:10.1136/gut.2011.239301.346

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Introduction Recent studies suggest that patients identified by Rome III criteria for functional constipation (FC) and irritable bowel syndrome with constipation (IBS-C) are not distinct groups. We have shown that patients with IBS-C exhibit limited 5-HT response to meal ingestion, with plasma concentrations remaining similar to fasting. Our aim was to determine whether patients with FC show a similar 5-HT meal response as IBS-C, and to investigate relationships to motor-sensory function.

Methods 23 IBS-C patients (aged 19–50 years; Rome III), 11 FC patients (25–46 years; Rome III) and 23 healthy volunteers (HV) (20–49 years) were recruited. Plasma 5-HT concentrations were measured under fasting (2 h) and fed (4 h) conditions. Within 2 weeks, oro-caecal (hydrogen breath) and colonic (radio-opaque markers followed by X-ray) transit, along with rectal sensitivity (barostat) were determined.

Results FC and IBS-C had similarly reduced 5-HT responses to meal ingestion (mean increase from fasting (SD), FC: –1.1 nmol/l (±6.9), p=0.1; IBS-C: –1.9 nmol/l (±7.0), p=0.02) compared with HV (+ 4.7 nmol/l (±9.6)), but comparable fasting 5-HT concentrations (FC: 34.2 nmol/l (±13.2); IBS-C: 27.8 nmol/l (±17.3); HV: 27.0 nmol/l (±9.6)). Likewise, FC and IBS-C have reduced colonic (FC: 61.6 h (±17.9), p=0.001; IBS-C: 55.6 h (±18.5), p=0.001 vs HV: 34.6 h (±17.8)) but not orocecal ((FC: 321.4 min (±96.6); IBS-C: 311.7 min (±96.6) vs HV: 301.8 min (±87.5)) transit compared with HV. Only rectal sensitivity differed, with IBS-C exhibiting lower pain thresholds (23.4 mm Hg (±8.3), p=0.03) but not FC (32.7 mm Hg (±12.2) compared with HV (30.7 mm Hg (±8.2)). Moreover, although the 5-HT meal response was similar between hyper- (–0.7 nmol/l (±4.9)), normo- (–1.5 nmol/l (±7.5) and hypo- (–4.7 nmol/l (±7.8)) sensitive constipated patients, those with hypo-sensitivity (FC (27%) and IBS-C (4%)) had higher fasting and fed 5-HT concentrations (fasting: 44.3 nmol/l (±17.2), fed: 39.6 nmol/l (±20.8), p=0.001 and p=0.08, respectively) compared with HV (24.7 nmol/l (±7.5), 27.9 nmol/l (±9.5)). Hyper- (20.4 nmol/l (±7.6), 19.7 nmol/l (±5.6)) and normo- (30.7 nmol/l (±16.6), 29.2 nmol/l (±16.8)) sensitive patients were no different from HV.

Conclusion There appears to be no distinction between FC and IBS-C patients with respect to 5-HT meal response and GI transit, although IBS-C patients are more viscerally sensitivity. Hypo-sensitive constipated patients appear to have a distinct 5-HT profile.

Competing interests None.

Keywords 5 HT, Constipation, Functional Gastrointestinal Disorders (FGID), IBS, Rectal Sensitivity, ROME III.

REFERENCES

1. *Am J Gastroenterol* 2010;105:2228–34.
2. *Gastroenterology* 2006;130:34–43
3. *J Chromatogr B* 2009;877:2163