

Conclusion Here we have shown for the first time that vasopressin and oxytocin have direct contractile effects on human isolated stomach muscle. The effective concentrations of vasopressin are within the range induced by nausea in humans. This indicates a potential direct role of vasopressin in signalling the induction of nausea in humans.

Competing interests None declared.

REFERENCES

1. **Stern RM**, Koch KL, Andrews PL. *Nausea: Mechanisms and Management*. Oxford Univ Press, 2011.
2. **Sanger GJ**, Holbrook JD, Andrews PL. The translational value of rodent gastrointestinal functions: a cautionary tale. *Trends Pharmacological Sci* 2011;**32**:402–9.

PWE-004 A STUDY OF FAECAL VOLATILE ORGANIC COMPOUNDS METABOLOME IN HEALTHY POPULATION ACROSS THE COUNTRIES

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Introduction Faecal biomarkers are emerging non-invasive tools for diagnosing gastrointestinal disorders. Faecal volatile organic compounds (VOCs) have been studied more recently in clinical diagnosis. Pattern of faecal VOCs in healthy population may provide basis for understanding changes in disease conditions. The VOCs within the metabolome may be different across the countries due to differences in dietary habits and environmental conditions and may have implications in developing their clinical utility.

Methods We aim to study the faecal VOCs of the healthy population from three different countries that is, England, Belgium and Canada. A total of 159 health volunteers (English=109, F=69), (Belgium=20, F=14), (Canada=30, F=17) donated faecal samples. Fresh samples were aliquoted in 18 mls sealed vials. VOCs were extracted using solid phase micro extraction and were analysed using gas chromatography–mass spectrometry. VOCs were identified using NIST library search comparing their fragment pattern.

Results A total of 232 VOCs were identified. Using binary data (presence or absence of VOCs), univariate analysis was used to identify those VOCs which were statistically significant ($p < 0.05$) in discerning differences between the three population groups. Alcohols, ketones and esters were predominantly associated with English volunteers compared to both Canadian and Belgium volunteers while aldehydes and alkenes were predominantly detected VOCs in the Canadian and Belgium groups respectively. A multivariate discriminant function analysis utilising these VOCs was able to differentiate three groups with a sensitivity of 96% and specificity of 90%.

Conclusion The observed differences in the faecal VOCs metabolites of the healthy population in different countries may provide important basis in the clinical utility of faecal biomarkers. It may also provide information in studying the differences in disease prevalence and behaviour in different countries. Further studies are warranted to explore this area.

Competing interests None declared.

REFERENCES

1. **Probert CS**, Ahmed I, Khalid T, et al. Volatile organic compounds as diagnostic biomarkers in gastrointestinal and liver diseases. *J Gastrointest Liver Dis* 2009;**18**:337–43.
2. **Angriman I**, Scarpa M, D'Inca R, et al. Enzymes in feces: useful markers of chronic inflammatory bowel disease. *Clin Chim Acta* 2007;**381**:63–8.

PWE-005 HIGH RESOLUTION ANORECTAL MANOMETRY: FIRST STUDY ESTABLISHING NORMAL VALUES IN HEALTHY VOLUNTEERS

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Introduction High Resolution Anorectal Manometry (HRAM) combined with interpretive software allows for the interpolation of manometric recordings into highly detailed topographical plots of intraluminal pressure events. HRAM has previously been shown to correlate highly with conventional water perfused manometry measurements.¹ This preliminary study is the first report establishing HRAM pressures in healthy volunteers. The advantages of the detection of pressure changes over a longer length of the anal canal have already been shown to improve accuracy and the detection of abnormalities in the anorectum.²

Methods HRAM was performed using the Medical Measurement System (Enschede, Netherlands) consisting of an 8-channel HRAM catheter with sensors spaced at 0.8 cm intervals. Pressure data are displayed in topographic form using Medical Measurement System analysis software that is integrated into the system. Measurements of anal sphincter pressure at rest, cough, during voluntary squeeze, endurance squeeze and pushdown were evaluated. Volunteers also completed a questionnaire which provided a Wexner score.

Results A total of 20 healthy volunteers (11 Female, 9 Male) with a mean age of 40 (range 19–60) constituted the study population. The Wexner scores ranged from 0 to 1 (median 0).

Conclusion These preliminary measurements of HRAM pressures in healthy volunteers could serve as a valuable resource of normative data when performing HRAM studies in disease specific groups such as incontinence and constipation.

Abstract PWE-005 Table 1

Anal sphincter	Range	Median
Resting pressure	30–163 cm H ₂ O	109 cm H ₂ O
Cough pressure increase	39–305 cm H ₂ O	143 cm H ₂ O
Voluntary squeeze pressure	50–922 cm H ₂ O	275 cm H ₂ O
Endurance squeeze time	18–125 s	52 s
% of relaxation during pushdown	0–42% (17/20 relaxed)	14%

Competing interests None declared.

REFERENCES

1. **Jones MP**, Post J, Crowell MD. High-resolution manometry in the evaluation of anorectal disorders: a simultaneous comparison with water-perfused manometry. *Am J Gastroenterol* 2007;**102**:850–5.
2. **Rao SS**. Advances in diagnostic assessment of fecal incontinence and dyssynergic defecation *Clin Gastroenterol Hepatol* 2010;**8**:910–19.

PWE-006 DIAGNOSTIC YIELD AND CLINICAL OUTCOME FOR DEFAECATING PROCTOGRAPHY AND ANORECTAL MANOMETRY IN PATIENTS WITH CHRONIC CONSTIPATION

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Introduction Defaecating proctography (DFP) and anorectal manometry (ARM) are both used to investigate chronic