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

PWE-004 A STUDY OF FAECAL VOLATILE ORGANIC COMPOUNDS METABOLOME IN HEALTHY POPULATION ACROSS THE COUNTRIES
doi:10.1136/gutjnl-2012-302514d.4

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 metabolomes 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 ml 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

PWE-005 HIGH RESOLUTION ANORECTAL MANOMETRY: FIRST STUDY ESTABLISHING NORMAL VALUES IN HEALTHY VOLUNTEERS
doi:10.1136/gutjnl-2012-302514d.5

Introduction High Resolution Anorectal Manometry (HRAM) combined with interpretive software allows for the interrogation 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. 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.

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

<table>
<thead>
<tr>
<th>Anal sphincter</th>
<th>Range</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resting pressure</td>
<td>30–163 cm H2O</td>
<td>109 cm H2O</td>
</tr>
<tr>
<td>Cough pressure increase</td>
<td>39–305 cm H2O</td>
<td>143 cm H2O</td>
</tr>
<tr>
<td>Voluntary squeeze pressure</td>
<td>50–922 cm H2O</td>
<td>275 cm H2O</td>
</tr>
<tr>
<td>Endurance squeeze time</td>
<td>18—125 s</td>
<td>52 s</td>
</tr>
<tr>
<td>% of relaxation during pushdown</td>
<td>0—42% (17/20 relaxed)</td>
<td>14%</td>
</tr>
</tbody>
</table>

Competing interests None declared.

REFERENCES

PWE-006 DIAGNOSTIC YIELD AND CLINICAL OUTCOME FOR DEFaecATING PROCTOGRAPHY AND ANORECTAL MANOMETRY IN PATIENTS WITH CHRONIC CONSTIPATION
doi:10.1136/gutjnl-2012-302514d.6

Introduction Defaecating proctography (DFP) and anorectal manometry (ARM) are both used to investigate chronic
constriction but their relative clinical performance is unclear. Our aim was to investigate the diagnostic yield and clinical outcomes of DFP and ARM in chronic constipation.

**Methods** Patients who had undergone both DFP and ARM over a 3-year period were studied retrospectively. Demographics, treatment and clinical outcomes were recorded. The diagnosis was recorded as “mixed” if investigation showed evidence of both anismus and anatomical problems such as rectocele, intussusception or prolapse. The clinical outcome was defined as positive if the test resulted in treatment with symptomatic improvement, or resolution at follow-up. To determine whether there was a selection bias in those undergoing both DFP and ARM we additionally looked at the two groups having solely DFP or ARM from the same period.

**Results** DFP and ARM group: 45 patients (40 female, 58% surgical referrals; age range 17–85 years; median 46) underwent both DFP and ARM. The diagnostic yield for DFP was higher at 98% (anismus 44%, anatomical 40%, mixed 14%; normal 2%) vs 47% for ARM (anismus 26%, mixed 21%; normal 53%). There was diagnostic concordance in only 11 (26%), partial concordance in 9 (21%) and discordance in 23 (53%) patients. Although the diagnostic yield of DFP was much greater than ARM in this combined group, both tests led to similar positive outcomes regardless (47% in DFP vs 45% in ARM) when tests revealed a pathology. Single investigation groups: 10 patients had DFP alone (8 female, 60% surgical referrals; age range 22–73 years, median 55) with a diagnostic yield of 90% (anismus 50%, anatomical 50%, mixed 10%; normal 10%). The positive outcome in those with a detectable pathology was 33%. 15 patients had ARM alone (14 female, 27% surgical referrals; age range 19–75 years, median 50) with a diagnostic yield of 67% (anismus; 33%; normal). The positive outcome in one with a detectable pathology was 70%.

**Conclusion** DFP had a higher diagnostic yield than ARM, but concordance was poor. Greater diagnostic yield did not translate into more positive clinical outcomes either. The clinical impact of additional DFP-based diagnoses is therefore questionable. The single test cohort data suggest that patients having DFP alone are a different clinical population from those who accessed both tests, since diagnostic yields and clinical outcomes were higher for ARM alone. The latter group were predominantly medical gastroenterology referrals. Further study is required to design optimal investigation strategies for chronic constipation.

**Competing interests** None declared.

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**Ossephageal II**

**PWE-008 DO STATINS PREVENT THE HISTOLOGICAL SUBTYPES OF OSEPHAGEAL CANCER? PROSPECTIVE DATA FROM THE UK GENERAL PRACTICE RESEARCH DATABASE (GPRD)**

**doi**: 10.1136/gutjnl-2012-302514.d.8

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**Introduction** The incidence of oesophageal adenocarcinoma (OAC) has risen dramatically in the Western world and is associated with a poor prognosis. Statins show anti-cancer properties in experimental work with OAC cell lines for example reduced cell proliferation, increased apoptosis. This study aimed to investigate if statins are negatively associated with the development of two different histological subtypes of oesophageal cancer, OAC and oesophageal squamous cell cancer (OSCC), in a prospective cohort study.

**Methods** The cohort was over 4 million people in the General Practice Research Database (GPRD), a UK database of 488 nationwide general practices. Information is recorded on medication use prior to development of other illnesses, including cancers. Statin use identities and sub-classification of histologically confirmed cases of OAC and OSCC. Each case was matched with four controls and conditional logistic regression estimated the OR plus 95% CIs for the development of each type of cancer, adjusted for diabetes, BMI, smoking, aspirin, PPIs and drugs that relax the lower oesophageal sphincter.

**Results** 581 histologically confirmed cases of OAC (77.8% men, mean age 70.7 years, SD=11.4) and 332 cases of OSCC (58.6% men,