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2013 - 2014
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Ms Lynne Smith

Welcome

Welcome to the June 2014 edition of New Wave. If you have any relevant articles of papers that you would like to be included in future editions, please email them to warren.jackson@hey.nhs.uk

I am sure you will all join us in congratulating Lynne Smith who has been awarded an MBE for services to Healthcare Science.

The MBE is awarded for significant achievement and outstanding service and is very well deserved for the for all the work and time that Lynne have given, particularly to Modernising Scientific Careers and the development of AGIP’s educational and accreditation programmes. Lynne will provide an article for NewWave after she attends her invitation to Buckingham Palace to receive her award.

Equivalence: Second AGIP Member to be registered with HCPC following Academy's equivalence process:

Huge congratulations to Elisa Wrightham for becoming the second AGIP member to be registered with the Health and Care Professions Council after successfully completing the Academy for Healthcare Science's Equivalence assessment.

HOT OFF THE PRESS NEWS from RCCP:
Important Update Regarding Regulation.

The House of Commons Health Select Committee responded to the recent reports from both RCCP and HCPC regarding Statutory Regulation for Clinical Physiologists. The response is very positive and RCCP (and HCPC) will now intensify their efforts to achieve Statutory Regulation for Clinical Physiologists.

RCCP statement is as follows:

"We welcome the House of Commons Health Select Committee’s report on the Health and Care Professions Council’s work and agree that it is concerning how long it can take for professional groups to gain statutory regulation when there is a clear patient safety case for doing so. The report follows evidence to the Committee from the RCCP on how voluntary registration accredited or otherwise, cannot achieve the patient safety regime we all want to see. HCPC agreed strongly with RCCP in their evidence session to the Committee and said that they viewed clinical physiologists as a priority group for statutory regulation, given the larger number of people working in the profession."
The Committee believes that if there are unregulated groups which need to be regulated on the grounds of patient safety, this should be dealt with swiftly. They have asked HCPC to list any professional groups for which they feel there is a compelling patient safety case for statutory regulation so that the Committee can take this up with the Department of Health as a matter of urgency.

The legislation required to regulate Clinical Physiologists is relatively straightforward as most of the groundwork has already been done. Should this be achieved all RCCP registrants would be automatically transferred to HCPC with no additional evidence required. We would therefore advise our members who are not currently registered with RCCP to do so unless already on a statutory register.

Information on registration requirements can be obtained directly from the RCCP website. Kathy Noble is our representative on the RCCP Council and will also give advice on registration.

(katherine.noble@heartofengland.nhs.uk)

The following three posters were accepted by AGIP for poster presentation at the BSG Annual Scientific Meeting, Manchester, 16th – 19th June 2014:

**IS THERE A RELATIONSHIP BETWEEN IRRITABLE BOWEL SYNDROME SYMPTOMS AND SMALL BOWEL BACTERIAL OVERGROWTH?**

John R. Hayman 1, Gemma Pickering 1, David S. Sanders 2
1GI Physiology, Northern General Hospital
2Gastroenterology & Liver Unit, Royal Hallamshire Hospital, Sheffield, UK

**Introduction:** Small Bowel Bacterial Overgrowth (SBBO) has recently been proposed to be prevalent in patients with diarrhoea predominant Irritable Bowel Syndrome (IBS-D). However prevalence figures in studies have varied widely depending on the diagnostic test used, with low prevalence rates of 4% using jejunal aspirate and culture, to between 38-84% using hydrogen breath tests.

This study used the Glucose Hydrogen and Methane Breath Test (GHBT) to determine if there was a relationship
between patients with IBS-D symptoms and SBBO. Concurrently any clinical features or baseline laboratory investigations indicative of a high likelihood of SBBO was investigated.

**Methods:** A retrospective analysis of patient hospital records for patients referred to a tertiary GI Physiology Department at Sheffield Teaching Hospitals (STH) between January 1988-2013 for a routine GHBT was conducted. Data was split into two groups. Group 1 included all patients demographics referred for a GHBT (1998-2010) to investigate characteristics predictive of SBBO. Group 2 included patients who fulfilled ROME III criteria for IBS-D who underwent a GHBT (2010-2012). A positive result for SBBO was defined as a rise in hydrogen or methane levels of ≥10ppm over baseline levels.

**Results:** In group 1 786 patients were identified (276 male, mean age 54). Overall 175/786 (22.3%) tests were positive. Laboratory investigations and patient characteristics predictive of a positive result were low vitamin B$_{12}$ (p<0.001), low albumin <30g/dL (p<0.001), concurrent use of a proton pump inhibitor (PPI) (p=0.002), previous Bilroth II gastroenterostomy (p<0.001), previous vagotomy (p<0.001), right hemi-colectomy (p=0.003), coeliac disease (p<0.001), and small bowel Crohn’s disease (p=0.04) and age over 65 years (p<0.001). Symptoms predictive of a positive GHBT included diarrhoea (p=0.03) and weight loss (p<0.01).

In group 2 135/834 patients fulfilled ROME III criteria for IBS-D (42 male, mean age 43 years). Overall 26/135 (19.3%) tests were positive. A significant correlation was found between patients with IBS-D symptoms and SBBO (p=0.01). Characteristics predictive of SBBO in IBS-D patients were previous small bowel surgery (p=0.04) and blind loop syndrome (p=0.04).

**Conclusion:** This study has further highlighted the proposed relationship of IBS-D symptoms and an increased prevalence of SBBO. In IBS-D patients factors predictive of SBBO were previous small bowel surgery and blind loop syndrome. For the sub-cohort of patients attending for a GHBT factors predictive of SBBO were patient age (≥65 years), diarrhoea, weight loss, use of a PPI, previous Bilroth II gastroenterostomy, previous vagotomy, right hemi-colectomy, coeliac disease, small bowel Crohn’s disease, low Vitamin B$_{12}$ and low albumin.

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**FUNCTIONAL CORTICAL SWALLOWING ACTIVITY AND NEUROTRANSMITTERS CONCENTRATIONS ARE ALTERED FOLLOWING NEUROSTIMULATION OF PHARYNGEAL MOTOR CORTEX: AN FMRI AND RESONANCE SPECTROSCOPY (MRS) STUDY.**

Emilia Michou 1*, Satish Mistry 1, Rishma Vidyasagar 2, Darragh Downey 3, Steve Williams 2, Shaheen Hamdy 1

1Gastrointestinal Sciences
2Centre for Imaging Sciences
3Institute of Brain, Behaviour and Mental Health, University of Manchester, Manchester, UK

**Introduction:** Combined pharyngeal electrical and transcranial-magnetic-stimulation or paired associative stimulation (PAS) is shown to induce beneficial neurophysiological and behavioural effects on swallowing in health and dysphagic stroke patients (Michou et al, Gastroenterology 2012). Here, we investigate brain changes during swallowing following application of PAS, using fMRI and MRS spectroscopy to measure neural activity and GABA concentrations in the motor cortices.

**Methods:** Healthy adults (n=11, 38±9 yoa) were randomised to receive real and sham PAS on 2 separate visits. Event-related fMRI was performed to assess changes in brain activations in response to water and saliva swallowing and during rest. Data were analysed (SPM8), applying p<0.001 uncorrected thresholds with contrasts of ‘water swallowing-rest’ and ‘saliva swallowing-rest’. MRS data were acquired before and after the fMRI on both visits and GABA concentrations were measured (AMARES, jMRUI).

**Results:** Following real PAS, group analyses of ‘water swallowing-rest’ and ‘saliva swallowing-rest’ showed increased activation in motor and premotor areas bilaterally. Moreover, real PAS increased activations prominently in premotor areas contralateral to PAS (Figure 1 group mean brain activations following real PAS). Following real PAS, GABA concentrations in motor cortex decreased significantly both ipsilateral (P=.008) and contralateral (P=.013) to PAS.

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Sandhill Scientific Clinical Training Seminar

INVITATION

Charing Cross Hotel (Canterbury Room), The Strand, London, WC2N 5HX.
Tuesday, 30th September – Thursday, 2nd October 2014

GI Motility Seminars offer you the opportunity to increase your Continuing Personal or Professional Development with our
ning Courses, as follows:

1 - Introduction to Impedance/pH Reflux Testing  Tuesday 30th September 2014
2 - High Resolution Impedance Manometry (HRiM)  Wednesday 1st October 2014
3 - Introduction to Impedance/pH Reflux Testing (Pediatric)  Thursday 2nd October 2014

CPD:  CPD accreditation for all 3 days of the Seminar is being applied for.

FACULTY: Jean Osborn, BSN RN (Clinical Education & Training, Sandhill Scientific)

REGISTRATION FEES (Up to 20% discount available for booking more than 1 day)

1 DAY ONLY………………… £120.00
ANY 2 DAYS………………. £200.00
ALL 3 DAYS…………………. £285.00 (Please note that Day 3 is a repeat of Day 1)

Fees includes VAT, registration, lunch, morning/afternoon tea/coffee, handbook, Certificate of Attendance
Conclusion: Targeted neurostimulation applied to the human pharyngeal motor cortex induces local and remote changes in both primary and non-primary areas for water and saliva tasks. Moreover, stimulation leads to reduction of the inhibitory neurotransmitter GABA, when associated with swallowing. These findings allow us to understand the mechanisms underlying the beneficial effects of neurostimulation in modulating the brain swallowing network.
A SURVEY ON PATIENT WELLBEING AND PATIENT COMFORT DURING OESOPHAGEAL INTUBATIONS. A MULTICENTRE STUDY.

Melissa Brennan 1*, Tracey Moran 1, Patricia Lawlor 1, Lillian Barry 2, Margaret Treacy 3, John V. Reynolds 4, Ravi Narayanasamy 4

1GI Function Unit, St James Hospital, Dublin 8
2Clinical Measurement Lab, Mercy University Hospital, Cork
3University College Hospital, Galway, Co. Galway
4Department of Surgery, St James Hospital, Dublin 8, Ireland

Introduction: A Multicentre survey was undertaken from November 2013 until January 2014 on 80 patients (45 F Vs 35m) undergoing oesophageal manometry and/or oesophageal 24hr pH/impedance study. The aim of this study was to determine the overall wellbeing of the patient during their investigation. Oesophageal intubations are invasive techniques which many patients find quite distressing. These studies require the patient to be alert and to be able to swallow liquid boluses. In order to retain their normal oesophageal function, sedation or oral anaesthetic spray is not routinely administered. This study was compiled to obtain specific patient data from Gastrointestinal (GI) Units throughout Ireland by conducting a survey post patient procedure.

Methods: A survey containing short answer questions was devised and GI units providing a service in GI Physiology testing were asked to participate. The patient was asked to answer either ‘Yes’ or ‘No’ to the questions or score the answers to the questions with a value from 0-10 with 10 being the most severe scale of discomfort/anxiety and 0 being the least.
**Results:** Table (1.1) below shows the results obtained from the multicentre survey.

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (years)</td>
<td>49.23</td>
<td>53.58</td>
<td>43.63</td>
</tr>
<tr>
<td>Successful intubation rate %</td>
<td>96.30%</td>
<td>95.60%</td>
<td>97.10%</td>
</tr>
<tr>
<td>Successful intubation rate in patients &lt;40 years</td>
<td>94.40%</td>
<td>94.40%</td>
<td>94.40%</td>
</tr>
<tr>
<td>Successful intubation rate in patients &gt;40 years</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Mean anxiety score prior to investigation *</td>
<td>4.73</td>
<td>5.47</td>
<td>3.77</td>
</tr>
<tr>
<td>Mean anxiety score post procedure *</td>
<td>1.96</td>
<td>2.26</td>
<td>1.59</td>
</tr>
<tr>
<td>Mean discomfort level</td>
<td>4.91</td>
<td>4.93</td>
<td>4.89</td>
</tr>
<tr>
<td>Number of patients who would be anxious if studies had to be repeated</td>
<td>32.55%</td>
<td>35.56%</td>
<td>28.57%</td>
</tr>
<tr>
<td>Number of patients who would choose to have an anaesthetic spray administered</td>
<td>61.25%</td>
<td>66.67%</td>
<td>54.29%</td>
</tr>
</tbody>
</table>

* On a scale of 0-10 (10 indicating highest rating of anxiety/discomfort) Table 1.1

The reasons given for failed intubations included patient anxiety, nasal sensitivity and previous traumatic Endoscopy experience. With regards to patient anxiety prior to investigation; no option for general anaesthetic, sedation, nasal spray, throat spray, and the fear of the unknown were the main reasons for the high patient anxiety scores.

**Conclusion:** Appropriately trained GI Physiologists achieved a 96.3% rate of successful oesophageal intubations. Despite this, patient anxiety in anticipation of their procedure is relatively high. With the option of a nasal spray, this survey suggests that patient anxiety levels prior to their investigation would be reduced, thus making the intubation a more pleasant, tolerable and less traumatic experience.

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**Forthcoming Events:**

We hope to publicise forthcoming meetings and educational events. We would like to invite interested parties to contact the NewWave editor (warren.jackson@hey.nhs.uk) to have their details included in future issues.

Sept - Dec 2014 Medical Measurement Systems (MMS) web seminar schedule for 2014:

[All webinars are 3.00-4.30pm CE(S)T - Amsterdam time]:

- **Urodynamics:**
  - Tuesday 16th September
  - Wednesday 17th December

- **Impedance-pH:**
  - Tuesday 7th October
  - Wednesday 29th October

- **Advanced HRM case interpretation:**
  - Thursday 4th September
  - Thursday 13th November
  - Thursday 11th December

- **High Resolution Anorectal Manometry (HRAM):**
  - Thursday 6th November

- **High Resolution Oesophageal Manometry (HRM):**
  - Thursday 16th October
  - Wednesday 19th November
Each session is FREE of charge:

10th – 11th July 2014  International Masterclass on Lower GI Function Testing
Queen Mary University of London, Whitechapel Campus, London
%20Lower%20GI%20London%20July%202014%20UK%20version.pdf

**See attached advert in this edition of NewWave!**

30th Sept–2nd Oct 2014  Sandhill Scientific Clinical Training Seminar
Day 1: Introduction to Impedance/pH Reflux Testing
Day 2: High Resolution Impedance Manometry (HRM)
Day 3: Introduction to Impedance/pH Reflux Testing (Paediatrics)
Charing Cross Hotel (Canterbury Room), The Strand, London,
Email for further information: sales@synmed.co.uk
See Advert in this issue of NewWave

18th – 22nd Oct 2014  United European Gastroenterology (UEG) Week
Vienna, Austria
www.ueg.eu/week

13th - 14th Nov 2014  Capsule Endoscopy in Clinical Practice (Autumn Course)
(Pillcam system) Lumley Castle Hotel, County Durham
http://www.diagmed.co.uk/documents/
LumleyCapsuleCourseRegistartionForm2014.pdf

1st October 2014  HRM & Impedance/pH Masterclass
Queen Elizabeth Hospital, Birmingham
Email rachel@ardmorehealthcare.com for further information
See Advert in this issue of NewWave