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PTU-143 **COMPARISON OF CLINICAL EFFECTIVENESS AND COMPLIANCE WITH TRANSANAL IRRIGATION TREATMENT: NEUROGENIC V.S. FUNCTIONAL BOWEL DISORDERS**

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10.1136/gutjnl-2018-BSGAbstracts.521

Introduction Transanal irrigation (TAI) has emerged as one of the therapeutic strategies in managing constipation and faecal incontinence in neurogenic bowel disorders (NBD). It is unclear whether patients with functional bowel disorders (FBD), particularly irritable bowel syndrome with constipation (IBS-C), refractory to standard therapies might benefit from TAI. We aimed at retrospectively assessing and comparing the effectiveness and compliance with TAI in patients with NBD and FBD.

Methods A retrospective review of selected NBD and FBD patients referred for TAI treatment at University College Hospital between 2013–2017 was carried out. Co-morbidities, medications and patients experience with TAI were evaluated. Clinical impact was assessed using the neurogenic bowel dysfunction score (NBDS). Intra-group comparison pre-TAI and post-TAI were performed.

Results 63 patients (mean age 50 years, 45 females) were reviewed. 39 patients had neurogenic bowel dysfunction, mostly multiple sclerosis and spinal cord injury, whereas 24 patients had IBS-C based on Rome III criteria. Depression was the most frequently reported comorbidity (8% and 29% of NBD and IBS-C, respectively). At baseline 82.5% of patients were taking conventional laxatives and chronic use of opioids was comparable between the groups (26% and 21% for NBD and IBS-C, respectively). Overall 37 patients (14 IBS-C and 23 NBD) were compliant to TAI at follow up. The mean NBD scores significantly improved in the whole cohort (10.8 *vs* 8.3 post-treatment; $p=0.01$). NBD scores significantly improved for IBS-C patients (12.9 *vs* 8.9; $p=0.02$) but not for the neurogenic ones (9.5 *vs* 8; $p=0.09$). Patients with IBS-C reported more infrequent bowel movements/week compared to NBD patients (2±1 *vs* 4±2, respectively). Post-TAI treatment, the average number of bowel movements/week increased in both groups (3 *vs* 2 and 5 *vs* 4 for IBS-C and NBD, respectively). Of the initial cohort, 17 patients (7 IBS-C and 10 NBD) were lost at follow up; whilst 9 patients (3 IBS-C and 6 NBD) abandoned the treatment. The main reasons for withdrawal were inefficacy of the treatment (66.7%) followed by TAI-related side effects in a third of patients. NBD patients reported a greater improvement in QoL whilst better bowel function control and more frequent bowel movements were the main reasons for continuing TAI therapy in IBS-C patients.

Conclusions TAI is an effective treatment for bowel dysfunction in patients with FBD showing a similar efficacy to that of the NBD group. Although larger prospective data are needed to validate these results, TAI should be considered as an effective strategy in managing patients with FBD, for whom traditional treatments have failed.

PTU-144 **REMOVAL OF NORMAL AND NEGATIVE PHRASES FROM ENDOSCOPIC SEMI-STRUCTURED TEXT FOR ACCURATE AUTOMATED ENDOSCOPIC AUDIT**

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10.1136/gutjnl-2018-BSGAbstracts.522

Introduction Most electronically stored endoscopic reports consist of semi-structured free text, containing a significant amount of auditable information. However, the unstandardised text requires cleaning prior to audit so that the data is standardised across patients. One major obstruction to the automated auditing of free text is phrases that mention an absence of a pathology such as 'No hiatus hernia is seen.' or 'There is no malignancy.'

Methods The current study aims to determine the complexity of semi-structured free text endoscopy reports and determine the simplest function in the globally most popular data analytics language 'R', to remove negative phrases from endoscopic text and to validate the performance of this algorithm against manual extraction.

Five hundred endoscopic reports were randomly selected for any procedure between Jan 1 2007 to Jan 1 2017.

The low average text complexity (measured using the package 'readability' in R based on sentence structure rather than terminology) was equivalent to age 14–15 years (Readability scores: Flesch KinCaid=9.8, Gunning Fog Index=13.3, Coleman_Liau=10.0) meaning that the text could be analysed using less processor intensive pattern recognition defined as 'regular expressions' rather than using machine learning.

Negative phrases were extracted from the first 100 reports as a training set, using the 'lexicon' package in R by cross referencing each sentence in an endoscopy report with a list of known negators to create generic regular expressions that could detect all negative phrases and incorporated into a script in R.

A endoscopist blinded to the automated results was required to remove all negative phrases whether in mixed or non-mixed sentences for the same 400 endoscopy reports. Automated and manually extracted phrases were then statistically compared to generate a sensitivity, specificity and accuracy measurement of automated extraction. The difference in audit outcome was also estimated when a comparison was made between simple keyword searches to populate the audit versus the use of negative removal as implemented using our technique.

Results The training set resulted in 12 regular expressions, compiled into a single runnable function, thought capable of detecting most negative phrases. This resulted in a sensitivity for the detection of negative phrases of 97.2%, specificity 74.61%, positive prediction value of 65.4% and a negative prediction value of 98.01%. When the regular expression function was run against a simple keyword search for certain phrases, certain terms demonstrated a significant difference in their detection when keyword searches were used before and after the negator removal function was used. The term CLO for example was detected 12.25% without negator removal and 7.25% with the function.

Conclusions Given the simple sentence structure of the endoscopy reports across multiple endoscopists, a simple processor-nonintensive approach to the removal of negative or normal findings is feasible. Although there is room to improve the specificity further, it is preferable to have false positives in the output result which may require minimal work to remove in the final data cleaning stage. The removal of negators is likely