decisions. Reactive TDM is performed in response to a disease flare, whereas proactive TDM consists of periodic TDM to allow treatment optimization and prevention of possible flares. In the main, GI centres recommend the use of TDM as opposed to an empirical management of patients on anti-TNF. However, there are a limited number of studies that have addressed whether proactive TDM leads to improved clinical outcomes in comparison to reactive TDM.

Aim The aim of this study was to investigate if proactive TDM improves patient disease management by reducing the risk of treatment failure due to LoR and/or development of anti-drug antibody.

Patients and Methods We conducted a single-centre prospective observational study to accrue data on proactive TDM between June 2019 and June 2020. We compared this group to a historical cohort of patients with IBD treated at the same centre using reactive TDM between 2014 and 2017.

Results 30 children with IBD (16 M, mean age at diagnosis 11.47 years $\pm$ SD 2.93, median 12, range 3–16) started on anti-TNF treatment between June 2019 and June 2020, were prospectively recruited (current follow-up duration: average 7.1 months $\pm$ SD 3, median 6.4, range 3.1–13). 10 had ulcerative colitis (UC), 19 had Crohn's (CD) and one had IBD-U CD-like. 37 children (20 M), 6 with UC and 31 with CD, were included in the retrospective cohort managed with reactive TDM. (Table 1).

More patients in the proactive TDM cohort (22/30) were managed by escalating the IFX regime (i.e. 10 mg/Kg 8 – 6 or 4 weekly) compared to the reactive TDM cohort (14/37) (chi-square 8.396, P 0.00376).

In the cohort managed with reactive TDM, a higher number of patients developed high titre anti-IFX antibody (> 50

U/ml) post induction (12/37 vs 3/30) (chi-square 4.798, P 0.0285).

The need for switching to different biologics was significantly higher in the reactive TDM cohort (22/37) compared to the proactive TDM cohort (1/30) (chi-square 23.15, P < 0.00001).

Conclusions The introduction of proactive TDM resulted in a significant reduction of patients requiring switch of their primary biologic and saw an increase in mean trough levels due to timely dose escalation. The results of this study are early indicators that proactive TDM offers a better method of managing children with IBD on IFX therapy compared to reactive TDM with the potential of additional clinical benefits such as reducing the risk of developing adverse drug reactions due to high antibody titres.

P08 APPLICATIONS, EFFICACY AND SAFETY OF OVER THE SCOPE CLIPS® IN CHILDREN

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10.1136/flgastro-2021-bspghan.19

Introductions Over The Scope Clips (OTSC)® have developed valuable indications in adult endoscopy. These indications include: non-variceal gastrointestinal (GI) bleeding, anastomotic bleeding, closure of fistulae such as gastro-cutaneous and post-gastrostomy persistent fistulae closure. Different clip sizes are available, the smallest being 8.5–9.8 mm in diameter with its loading device on the tip of the endoscope increasing the device and endoscope intubation diameter to 14.6 mm. This may present challenges in terms of the size of the patient in whom it might be used. OTSC® appear effective and safe when appropriate training is received in adult interventional endoscopy. There are no reported case series of OTSC® in children. We undertook a service evaluation of our recent experience with this technology in a regional/national referral paediatric endoscopy unit.

Methods The hospital database was searched to identify cases where OTSC® was used for indications other than acute non-variceal GI bleeding. A retrospective collection of data including demographics, presentation, anthropometry, co-morbidities, efficacy and complications was done. Post-procedure follow up was identified in the clinic or in-patient setting. Special emphasis was laid on resolution or recurrence of the original indication, and any complications related to the procedure.

Results Seven patients (3 male) were identified in whom the OTSC® procedure had been performed between February 2018 and February 2020. Median age was 10.8 (range 5.2–16.6) years. Median weight was 27.08 (range 18.2–44.3) kg. The patient profile, indications for the procedure and the outcome are detailed in table 1. Successful outcome was achieved in 5/7 patients and a complication of an oesophageal perforation occurred in 1/7 which healed without surgical intervention.

Conclusion The OTSC® device appears effective in a limited number of situations in older and larger children including anastomotic ulcers, closure of leaking percutaneous endoscopic gastrostomy (PEG) fistula/site following removal, gastric perforation and bleeding peptic ulcers. The operator should be an experienced endo-therapeutic endoscopist with specific OTSC® training, and the type and size of the OTSC® device should be carefully considered, along with any co-morbidities of the

Abstract P07 Table 1

	Proactive TDM cohort (recruited June 2019 – June 2020)
number	30
gender	16 M, 14 F
Type of IBD diagnosis	19 CD, 1 IBD-U CD-like, 10 UC
Disease location at diagnosis (Paris)	CD: 9 L1, 4 L2, 7 L3; 6 L4A, 4 perianal, 3 oral CD UC: 10 E4
Age at diagnosis (mean (years) $\pm$ SD, median, range)	11.47 $\pm$ SD 2.93, 12, 3–16
Age at start of IFX treatment (mean (years) $\pm$ SD, median, range)	12.93 $\pm$ SD 2.56, 13.5, 6–16 years
Current follow-up duration (mean (months) $\pm$ SD, median, range)	7.1 $\pm$ SD 3, 6.4, 3.1 – 13
Number of patients requiring IFX escalation	19
Number of patients with positive antibody at week 14	11
	8 with a titre of 10–50 U/ml 3 with a titre of > 50 U/ml
Number of patients requiring a switch to a different biologic	1 (Vedolizumab)
Number of patients requiring IBD related surgery	1 ileal resection 1 fistulotomy and drainage of perianal abscess

Abstract P08 Table 1

Serial	Age at the time of procedure Sex	Weight (Kg) Height (cm)	Background	Indication	ASA	Procedure details	Effect	Follow up
1	14 year 6 months Male	22 113.3	NBAS mutation. SOPH anomaly. Portal Hypertension with oesophageal varices. Frequent PEG-site infections.	Continuous leakage of Peg site with skin excoriation	3	OTSC®11 mm/6t. GIF-H290. Brush abrasion of the tract. Repeat OGD - previous clip dislodged. Second OTSC®11 mm/6t. GIF -H290. Anchoring device (AC) used to achieve airtight seal.	Leakage stopped straightaway	Outpatient follow-up in a week no leakage. However, the leak restarted after two weeks. Two months follow up – no further leak. 3 months – recurrence of symptoms. Surgical closure performed – no further leak
2	6 year 5 months Female	20.9 117.8	Hirschsprung's disease. Total colonic Duhamel pull through surgery at 3 years.	Anastomotic ulcer with poor response to:- - steroid enema - probiotics - sulfasalazine - CMP free diet - Wheat exclusion - Liquid paraffin - gut decontamination - APC.	2	OTSC®12 mm/6t of large ulcer. APC of 3 small ulcers. Olympus PCF-H290TL OTSC®11 mm/6t. Olympus GIF-H290	Improved haemoglobin and blood indices.	Outpatient in 6 weeks – no further bleeding PR. Procedure repeated after 17 months due to fresh anastomotic ulcer. The site of first OTSC® noted to be fully healed.
3	16 year 7 months Female	37.9 138.7	NEC Short bowel syndrome. Congenital heart disease (TOF). Colostomy for high stool output at the age of 15 years. Severe learning difficulties Epilepsy. Recurrent pancreatitis.	Gastric bleed due to ulcer	3	OTSC®(mini)10 mm/3t Olympus GIF-H290	Bleeding stopped at the site of ulcer.	Eventually developed severe haemorrhagic pancreatitis. (RIP)
4	8 year 5 months Male	27 131.1	Gastroschisis – primary closure day 1. More than 20 laparotomies. Home PN	Ileo-ileal anastomotic ulcer not responding to :- - conventional treatment - Haemostatic clips - APC - not amenable to surgery.	3	OTSC®12 mm/6t. Olympus PCF-H290TL	No further drop in haemoglobin.	Endoscopy after 7 weeks – No bleeding. Not requiring central venous access anymore.
5	10 year Female	18.2 121	Coeliac disease. Pica leading to tricho-bezoar of metallic doll hairs. Removed endoscopically at 9 year 6 months of age. Small bowel and gastric perforations. Gastro-colic fistula. Small bowel resection.	Gastric Perforation.	2	OTSC®11 mm. Olympus XQ 260 Gastroscope.	Technical success achieved	Required surgical involvement in view of multiple perforations.
6	5 year 3 months Male	19.25	Unexplained multisystem disorder Developmental impairment Past H/O faltering growth requiring PEG. Coombs Positive anaemia with thrombocytopenia	PEG site leak	3	OTSC®11/6t Olympus GIF -H290. Anchoring (AC) forceps and abrading brush used.	Immediate closure	No further leakage after 7 months of procedure

Abstracts

7	14 years 11 months Female	44.35 161.1	Di George syndrome PEG inserted with fundoplication at 4 months' of age PEG removed at 14 years as no longer required. Very slow eater	Peg Site leak	3	OTSC® 12/6 gc with Olympus dual channel operating gastroscope. OTSC® 11/6t with Olympus GIF-H290	Oesophageal perforation – managed conservatively	Required recommencement of gastric feed. High oesophageal stricture at site of perforation
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patient that may preclude success and/or lead to potential complications such as oesophageal perforation.

P09

ASSESSING VITAMIN E STATUS IN PARENTAL NUTRITION (PN) POPULATION IN ACCORDANCE TO ESPGHAN GUIDANCE: COMPARING SERUM VITAMIN E LEVELS TO VITAMIN E:CHOLESTEROL RATIO

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10.1136/flgastro-2021-bspghan.20

Introduction ESPGHAN guidance recommends measuring both serum vitamin E and its lipid ratio to accurately monitor vitamin E status amongst paediatric patients on PN. Alpha-tocopherol, the surrogate marker for vitamin E, is affected by lipid levels and as concentrations rise, vitamin E deficiency can be missed. Vitamin E deficiency can result in neurological sequelae. With cases reported in children with chronic cholestasis with normal vitamin E level but low vitamin E:cholesterol ratio. To our knowledge this is the first study evaluating the impact of these recommendations.

Method In February 2020, at Royal Manchester Children's Hospital, 34 children (<17 years old) were administered home PN. In this cohort the cholesterol ratio was utilised to determine the vitamin E:lipid ratio. Retrospective serum vitamin E level, cholesterol level, vitamin E:cholesterol ratio and hepatic profile were collected from the electronic laboratory system for specimens received between October 2019 to February 2020. Data were collated and analysed within Microsoft Excel 2017. Two patients did not have vitamin E:cholesterol ratio performed and were excluded resulting in a final study population of 32 patients, see table 1.

Results A positive relationship ($R^2 = 0.6707$) between cholesterol and vitamin E levels was demonstrated as seen in figure 1. In the cohort, the mean vitamin E and cholesterol levels were within the normal range but vitamin E:cholesterol ratio elevated, see table 2. High proportion of children had normal serum vitamin E level (75%, n=24), whilst levels were low in 4 patients (12.5%) but elevated in the remaining (12.5%, n=4). The majority (n=30; 94%) had a normal cholesterol levels with elevated levels in the remaining (n=2). Many patients (66%, n=21) had an elevated vitamin E:cholesterol ratio with this being normal in the remaining patients (n=11; 34%). Notably, no patients had a low ratio.

Abstract P09 Table 1 Study Demographics

		Overall Cohort (n=32)	Abnormal Hepatic Profile (n=13)
Vitamin E level	(11.6–34.8 mmol/L)	24.4 (10.0 – 52.4)	24.6 (10–52.4)
Cholesterol level	(0 – 4 mmol/l)	2.9 (1.9 – 7.9)	3.0 (1.9–7.3)
Vitamin E:	(3.85–7.56 ummol/mmol)	8.5 (4.75 – 12.60)	8.2 (4.75–12.6)
Cholesterol Ratio			

Abstract P09 Table 2 The mean values for the overall cohort and those with hepatic dysfunction

	Overall Population (n=32)	Abnormal Hepatic Profile (n=13)
Gender (male, female)	16 (50%), 16 (50%)	6 (46%), 7 (54%)
Age (month, years)	6.6 (9month-15years)	7 (2-14years)
Weight (kg)	19.5 (8.46 – 44.8kg)	19.6 (9.1-32kg)

Abstract P09 Figure 1 Within the entire cohort (n=32) the relationship between cholesterol and vitamin E levels