GI bleeds requiring endoscopy (UGIB) and/or other emergency upper endoscopies (OEE). Cases were reported in REDCap.

Results 28 centres provided denominator data with regard to the services they provide (covering 90% of the UK population). 22 provided prospective data for UGIB and 18 for OEE covering 70 and 60% of the UK population respectively.

98 cases were reported over a 6 month period: 34 UGIB, 55 OEE, (38 foreign body and 17 others); 9 less severe UGI bleeds not fitting the definitions were excluded from further analysis.

Of 25 centres reporting, 14(56%) had 0 UGIB and 20/25 (80%) had ≤ 2 over the 6 months. Endoscopic interventions for GI bleed were undertaken in only 6/25 centres.

The mean age of the UGIB group was 6.7 years, 29% were ≤ 1 year. 19(56%) had significant co-morbidities. Presenting symptoms were one or both of melaena and haematemesis. Of the 20 providing sufficient data for a Sheffield score, 25%(4/20) were high (≥ 8) at presentation (median score 2.5, range 1–24, interquartile range 3.25). Main findings at endoscopy; 8(24%) had no abnormalities, 14(41%) had UGI ulcers (6 duodenal, 6 gastric and 2 oesophageal), 9(26%) oesophagitis and gastritis, 8(24%) varices.

13(38%) required endoscopic treatment, 6 for varices, 4 for GU, 2 DU, 1 for blood in upper GI tract. 3 required surgery. Two patients died, one within 48 hours of the bleed in PICU in the context of sepsis and multi-organ failure. 14 patients required inter-hospital transfer, median time from hospital presentation to endoscopy was 97 hours for patients needing transfer and 24 hours for those not.

For the OEE (N=55), mean age was 6.3 years, 26% ≤ 1 year. 21(38%) had significant co-morbidities. Main indications were foreign bodies (25, 45%) - coins (15), battery (2), button battery (5), magnets and a toy. 13(24%) food bolus obstruction, 11(20%) caustic substance ingestion, 5 oesophageal stricture. 9/55(16%) endoscopies revealed no significant findings, 37(65%) required treatment at endoscopy. 50% (27 patients) had required inter-hospital transfer. Median time from first hospital presentation to endoscopy was 21 hours in those requiring transfer and 14 hours in those not.

Conclusions This is the first national prospective study of its kind examining the most urgent and severe endoscopy cases in under 16s. These data indicate that very small numbers of centres are performing endoscopic treatments for severe UGI bleeds. Inter-hospital transfers appears to be much quicker for surgical indications than UGIB although we did not find evidence of poor outcomes in the UGIB due to delayed transfer. The planning, location and skill mix of national emergency endoscopy services require careful consideration.

P21 EXPERIENCES IN DIETARY MANAGEMENT OF EOSINOPHILIC OESOPHAGITIS

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Introduction Patients with eosinophilic oesophagitis (EOE) are currently treated with medication (proton pump inhibitors (PPI)/topical steroids), diet restriction and dilation. Diet therapy consists of dietary exclusion of specific foods. A 'step-up' approach is usually recommended, considering empirical 1–2 food (milk $\pm$ wheat) exclusions then 4-food (additional

elimination of soya and egg), then 6-food (with additional elimination of nuts and seafood). Once in remission, individual reintroductions with endoscopic reassessment, helps guide the minimum number of food exclusions required to maintain this. At Great Ormond Street Hospital (GOSH), the GIANTS (gastro-intestinal, allergy, nutrition and therapy service) was a new service initiated in March 2018, managing all existing and newly diagnosed EOE patients at GOSH. This service evaluation project aimed to explore the most common strategies in dietary exclusions and how this impacted on growth and remission of EOE within our cohort.

Methods Retrospective electronic patient records review from March 2018–March 2020. Newly diagnosed patients on diet therapy under GIANTS were included. Patients who had been diagnosed prior to the inception of GIANTS and those with significant comorbidities e.g. trachea-oesophageal fistula were excluded.

Results There were 13 newly diagnosed patients (excluding those with comorbidities) with EOE in the GIANTS service. Of these patients, four patients (30%) completed diet therapy. One patient was unable to complete a milk exclusion and chose medicinal therapy. Children were 3 female, 1 male with a mean age of 7.4 years at diagnosis. Two patients commenced a milk free diet, one had a milk and soya free diet and the fourth had a milk, wheat and soya free diet. Three of four of these patients achieved remission. Three of four patients had trialled drug therapy (PPI) first with no histological remission. BMI z-score did not change between when the children were first diagnosed to achieving disease remission (mean BMI z-score -0.28 to -0.29). All patients had regular access to a dietitian.

Conclusion In this small service evaluation, medicine was the preferred treatment choice for families. This is likely due to the burden of changing the diet has on a family and a patient's quality of life. However, 75% of this cohort achieved histological remission on diet therapy. PPI appeared ineffective in this small patient group. Empirical food elimination via a step-up approach appears helpful in these patients, reducing burden of excessive exclusions and also reduced number of endoscopies when considering reintroduction of these foods. Growth appeared unaffected with no concerns with BMI. All patients on diet therapy had regular input with the dietitian, supporting the need for specialised dietetic input within gastrointestinal allergy. Whilst these findings are supported in the guidelines, more research is needed to look at which diet strategy is the most effective and how this is achieved, including how many previous treatments and endoscopies a patient has required. Achieving remission rates as timely as possible is crucial not only for the patient's quality of life but also to reducing the need for repeated endoscopies within short timeframes.

P22 FIBRATES: AN ADJUVANT THERAPY FOR CHOLESTASIS IN PAEDIATRIC AGE GROUP

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Introduction Bile formation is a delicate process. This is illustrated by inherited liver diseases caused by mutations

affecting hepatocanalicular transporters. It leads to intrahepatic accumulation of toxic bile acids with clinical features including pruritus, malabsorption and vitamin deficiencies. Chronic cholestasis leads to liver fibrosis which can progress to cirrhosis and end-stage liver disease. Effective treatment of these transport defects is a clinical and scientific challenge.¹

Fibrates were first noted to reduce hepatic alkaline phosphatase (ALP) isoenzyme levels during their development as cholesterol-lowering agents in the 1970s, which appeared to be related to their effect on peroxisome proliferator activated receptor PPAR- α receptor. Since then, several case reports and pilot studies have demonstrated the efficacy of fibrates in reducing serum biomarkers of cholestasis in patients with incomplete response to ursodeoxycholic acid (UDCA) monotherapy.²

Aim To assess the effect of fenofibrates on pruritus and biochemical laboratory values in children with none-obstructive cholestatic liver diseases.

Subject and Methods A prospective study, included 71 paediatric patients suffering from non-obstructive cholestatic liver diseases. They were recruited from outpatient clinics at The National Liver Institute, Menoufia University, Egypt and Dr. Yassin Abdel Ghaffar Charity Centre for Liver Diseases & Researches, Cairo, Egypt. Patients were divided into 2 groups:

- Therapy group (T-group): Received UDCA, 10–30 mg/kg/d orally and Fenofibratein (FF) 10–20 mg/kg orally, once per day. This group included 23 patients.
- Control group (C-group): Received UDCA acid 10–30 mg/kg/d by oral rout and included 30 patients.

Informed consents were obtained from the patients or careers and the study was registered as a clinical trial.

Both groups were followed up for 4 months with regular review visits at zero, 1 month and 4 months with the following data:

1. Full history taking including the points of the pruritus grading score (PGS),
2. Thorough clinical examination with stress on presence of pruritus marks

Abstract P22 Table 1 Pruritus Grading Score

Item	Degree
Distribution	Solitary site 1
	Multiple sites 2
	Generalized 3
Frequency	Episodic 1
	Frequent 3
	Continuous 5
Severity	Rubbing 1
	Scratching 1
	Localized excoriations 3
Sleep disturbance	Generalized excoriations 5
	Rare 0
	Occasional 2
Total	Frequent 4
	Totally restless 6
Total	19

3. Investigations: Liver function tests and FBC with every visit
4. Total serum bile acids, lipid profile and abdominal ultrasound at the start of the study and after 4 months.

Endpoints were defined:

1. Four months' follow up visit ($\pm$ 2 weeks)
2. 2- Developing serious side effects that needed change in their therapy (increased PGS, ALT or bilirubin $>1.5\times$ baseline).

Abstract P22 Table 2 Comparison between patients in T gp and C gp regarding the clinical outcomes after 1 month and 4 months of therapy

Outcome	1 month		P ₁ value	4 months		P ₂ value
	T-gp (n=23)	C-gp (n=30)		T-gp (n=18)	C-gp (n=26)	
Mean PGS (-/19)	6.5 $\pm$ 4.5	8.2 $\pm$ 5.8	0.36	3.2 $\pm$ 3	7.0 $\pm$ 5.4	0.07
Decreased PGS < 1.5 base line	5	4	0.02*	10	9	0.034*
Pruritus mark (%)	10 (45%)	12 (40%)	0.56	4 (22%)	7 (26.9%)	0.35
Abdominal pain	1 (4.3%)	2 (6.6%)	0.55	2 (11.1%)	0 (0%)	0.17
Nausea	0 (0%)	1 (3.3%)	0.53	0 (0%)	0 (0%)	NA
Diarrhea	2 (8.5%)	4 (13.1%)	0.55	2 (11.1%)	4 (15.3%)	0.62
ALT (IU/L)	179 $\pm$ 178	159.1 $\pm$ 119.9	0.302	104.2 $\pm$ 87.5	131.5 $\pm$ 86.7	0.767
Decreased ALT <1.5 x base line	2	5	0.396	4	0	0.02*
AST (IU/L)	250.6 $\pm$ 216.3	208.1 $\pm$ 198.5	0.412	125.2 $\pm$ 57.7	187.4 $\pm$ 105.2	0.047*
GGT (IU/L)	153.2 $\pm$ 171.1	303.6 $\pm$ 377.8	0.160	133.8 $\pm$ 117.4	326.0 $\pm$ 338.5	0.026*
ALK (IU/L)	445.3 $\pm$ 94.1	470.7 $\pm$ 115.9	0.599	471.0 $\pm$ 516.7	418.7 $\pm$ 206.9	0.167
ALB (g/dL)	3.9 $\pm$ 0.7	3.5 $\pm$ 0.9	0.700	4.2 $\pm$ 0.6	3.9 $\pm$ 0.8	0.422
BA (μ mol/L)	-	-	NA	79.3 $\pm$ 24.8	124.2 $\pm$ 90.5	0.001*
PT(seconds)	13.4 $\pm$ 3.3	14.7 $\pm$ 3.2	0.853	11.8 $\pm$ 1.7	12.5 $\pm$ 3.4	0.165
INR	1.2 $\pm$ 0.3	2.0 $\pm$ 2.5	0.120	1.1 $\pm$ 0.1	1.8 $\pm$ 2.8	0.105
TB (mg/dL)	11.7 $\pm$ 10.7	11.3 $\pm$ 8.4	0.219	6.1 $\pm$ 6.4	8.5 $\pm$ 6.8	0.369
DB (mg/dL)	7.1 $\pm$ 6.4	7.7 $\pm$ 5.7	0.998	4.2 $\pm$ 4.1	7.1 $\pm$ 4.9	0.196
TG (mg/dL)	-	-	-	152.0 $\pm$ 79.8	119.9 $\pm$ 49.4	0.631
CHOL (mg/dL)	-	-	-	159.5 $\pm$ 102.0	177.3 $\pm$ 114.6	0.635
HDL (mg/dL)	-	-	-	20.9 $\pm$ 15.9	30.4 $\pm$ 22.5	0.276
LDL (mg/dL)	-	-	-	116.4 $\pm$ 82.4	115.5 $\pm$ 107.2	0.651
HDL risk factor	-	-	-	11.5 $\pm$ 8.1	7.4 $\pm$ 4.9	0.04*
WBC (thousands/cm)	5.7 $\pm$ 2.6	12.4 $\pm$ 6.7	0.116	6.51 $\pm$ 3.0	8.82 $\pm$ 6.4	0.115
Neutrophil count	2.6 $\pm$ 0.77	6.29 $\pm$ 2.1	0.431	2.89 $\pm$ 0.73	3.98 $\pm$ 1.39	0.369
HB g/dl	10.3 $\pm$ 1.0	10.5 $\pm$ 1.6	0.391	11.0 $\pm$ 1.7	11.2 $\pm$ 1.4	0.644
HCT%	30.7 $\pm$ 3.3	29.5 $\pm$ 2.9	0.679	32.6 $\pm$ 5.7	31.3 $\pm$ 3.4	0.29
PLT (thousands/cm)	154.5 $\pm$ 56.6	264.9 $\pm$ 129.7	0.453	228.4 $\pm$ 196.5	214.7 $\pm$ 129.0	0.729

The changes in all parameters and discontinuation rates in the two groups were compared after one and four months of the therapy.

Results In total 71 patients were included in the study, 18 patients of them lots follow up during the study, while 53 continued. There were no significant differences in the baseline demographic and biochemical baseline data between the two groups ($P>0.05$).

After one month, there was statistically significant difference between the two groups in the PGS as it decreased by $<1.5\times$ base line in the T-group compared to the C-group ($P<0.02$).

After four months, there were statistically significant between the 2 groups regarding decreased ALT levels below $1.5\times$ base line levels, AST, GGT and bile acid levels in favour of the T-group ($P<0.02$, 0.047, 0.026 and 0.001 respectively).

Summary and Conclusion The use of FF in combination with UDCA provided satisfactory clinical outcomes, which could be a promising alternative, but patients should be monitored closely as side effects may occur despite achieving improvements in pruritus.

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P23 FIRST REPORTED CASE OF AN INTERLEUKIN-2 RECEPTOR β DEFICIENCY IN AN INFANT BORN TO NON-CONSANGUINEOUS PARENTS, PRESENTING WITH FAILURE TO THRIVE AND ENTEROPATHY

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Introduction Failure to thrive is not an uncommon paediatric presentation with multiple, often easily treatable, aetiologies. Immune dysfunction is a rare cause which often manifests with a combination of inflammatory and infectious pathology.

Aim We present a rare cause of immune deficiency, the first reported case attributable to this genetic abnormality in the absence of consanguinity, presenting with immune mediated enteropathy.

Method A five-month-old female presenting with bronchiolitis symptoms, was found to be failing to thrive. Her weight was on the 0.4th centile, gaining just 200 g in the preceding eight weeks.

The first born to non-consanguineous parents of Pakistani descent, she was born at 39 weeks' gestation weighing 2.52 kg. There was no significant family history and she had breastfed successfully for the first three months, growing along the 9th centile, and meeting developmental milestones.

By seven months she was 1 kg below the 0.4th centile, weighing the same as at three months. Bottle refusal and a failure to wean to solids accompanied chronic diarrhoea, oral and perianal inflammation, and eczematous dermatitis. Amino acid nasogastric feeds resulted in a small weight gain, but no relief of systemic symptoms.

Developmental delay and soft dysmorphic features were apparent, and she developed recurrent fevers, polyarticular

swelling affecting knees and joints of the hands and feet, widespread lymphadenopathy, and chronic bilateral uveitis.

Results Double negative T cell levels were elevated, inflammatory markers and liver enzymes were persistently high and cytomegalovirus (CMV) IgG was positive. Hypergammaglobulinaemia and numerous autoantibodies were demonstrated. Faecal calprotectin was markedly raised, and endoscopy revealed nonspecific acute on chronic inflammation of the duodenum and stomach.

By 12 months of age, total parenteral nutrition and pulsed methylprednisolone, followed by oral prednisolone had been started. Symptoms improved, she began to gain weight and make developmental progress.

Full genome sequencing and parental genetic analysis, identified an autosomal recessive interleukin-2 receptor β (IL2RB) mutation, giving a diagnosis of IL2RB deficiency.

The patient is now recovering following haematopoietic stem cell transplantation, with the aim of definitive cure.

Conclusion Interleukin-2 is involved in building protection against autoimmune disease by stimulating T-cell differentiation. Genetic mutations in its receptor are exceptionally rare, with only four homozygous defects identified in seven infants, one neonate, and two fetuses, all conceived to consanguineous marriage partners. Common clinical manifestations amongst the seven surviving the neonatal period reflect the underlying immune dysregulation with enteropathy, arthritis, uveitis, dermatitis and hypergammaglobulinaemia, together with a susceptibility to respiratory and herpesvirus infections. Inflammatory features were prominent in this case but she went on to develop symptoms of CMV illustrating the conundrum of managing inflammation with underlying immunosuppression.

Failure to thrive, diarrhoea, eczema and recurrent viral infections are not uncommon in paediatrics. However, when rare aetiology is responsible, the journey from presentation to diagnosis can be long.

The time from presentation to referral for definitive treatment was remarkably quick in this case. This is testament to the exceptional collaborative multidisciplinary working across sub specialities, leading to a prompt diagnosis and definitive management.

P24 FOOD REINTRODUCTION PATTERN IN CHILDREN WITH COMPLEX GASTROINTESTINAL FOOD ALLERGY

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Introduction and Objective Gastrointestinal food allergy (GIFA) is a common condition in paediatric age and both IgE-mediated and non-IgE-mediated reaction are well recognised underlying mechanisms involved in its pathogenesis. Due to the non-specificity of GI symptoms, GI allergic reactions may significantly overlap with a number of other GI disorders, making the diagnosis lengthy and confusing (Heine, 2015). Moreover, in this patient cohort, prolonged food exclusions are common and possibly unnecessary. In our retrospective study, we explore the impact of multidisciplinary team (MDT) approach on the food reintroduction rate in a group of children seen in a tertiary GI allergy service.

Method 108 patients (83 new, 25 follow up) were seen between April 2019 and April 2020 in an MDT setting