

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 gastroscop. 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.

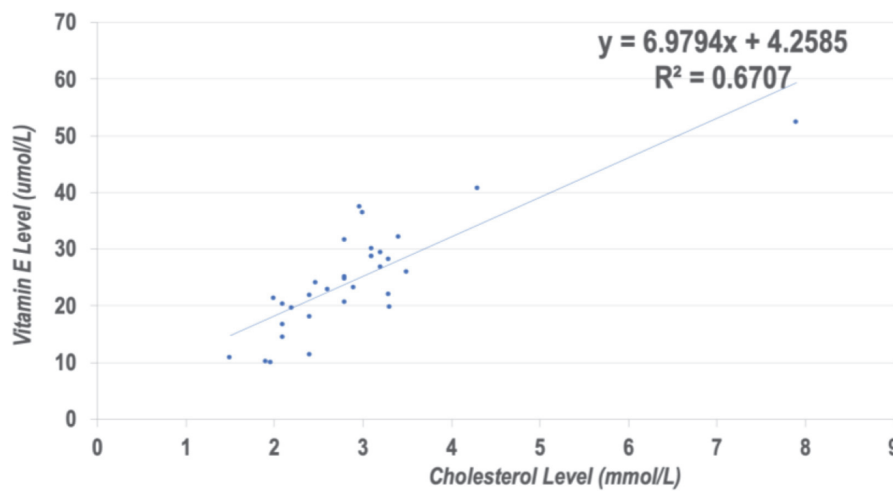
**Results** A positive relationship ( $R^2 = 0.6707$ ) between cholesterol and vitamin E levels was demonstrated as seen in figure 1. In the cohort, the mean vitamin E and cholesterol levels were within the normal range but vitamin E:cholesterol ratio elevated, see table 2. High proportion of children 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

Patients with low vitamin E level (n=4) all had a normal vitamin E:cholesterol ratio. Thus, in accordance with the ESPGHAN guidance<sup>1</sup> these patients had a normal vitamin E status. In this subgroup, if the serum vitamin E level alone had been measured these patients would have undergone PN adjustments which were not clinically indicated.

Hepatic profile was performed in 94% (n=30) and derangement was noted in 41% (n=13). In this sub-cohort, the mean vitamin E, cholesterol levels and vitamin E:cholesterol ratio were similar to the entire cohort, see table 2. One patient demonstrated cholestasis (raised ALP and GGT) and associated abnormal synthetic liver function (raised PT time, normal albumin) with a normal vitamin E:cholesterol ratio (and cholesterol level) but high vitamin E level; thus, deficiency would not have been missed.

No patients had a low vitamin E:cholesterol ratio. These results are not keeping with other studies. This could be attributable to the small study size. Also, as increased age is a risk factor for elevated lipid levels, this paediatric only population could be a limitation of this study.

**Conclusion** In accordance with the ESPGHAN guidance this study demonstrated the utility of measuring the vitamin E:cholesterol ratio to define the vitamin E status amongst the home PN population with potentially associated economical and logistical benefit.

P10

#### CASE REPORT: MUCINOUS ADENOCARCINOMA OF COLON IN AN ADOLESCENT

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10.1136/flgastro-2021-bspghan.21

**Introduction/Background** Colorectal carcinoma (CRC) is commonly found in adults. CRC in the paediatric population is extremely rare.

Paediatric patients with CRC present with non-specific symptoms (abdominal pain, obstructive symptoms, anaemia) and may have an abdominal mass – similar to the presentation in adults.

Primary GI malignancies constitute ~2% of paediatric neoplasms. On the other hand, paediatric CRC comprises a small proportion of all CRC. Diagnosis of CRC in the paediatric population is usually delayed due to its rarity and therefore low index of suspicion. CRC in children can be associated with Polyposis Syndromes and inflammatory bowel disease (IBD). Sporadic CRC in children is rare.

We report a case of mucinous adenocarcinoma of the colon in a 17-year old female who presented with abdominal pain, altered bowel habit, anaemia and developed bowel perforation while awaiting colonoscopy. Diagnosis was confirmed on histology of resected caecum and ascending colon.

**Case report** A 17-year old adolescent girl was admitted under general paediatric team with abdominal pain, blood in stool, feeling tired, possible low-grade fever. She was noted to have severe anaemia (Hb 47 g/L); other blood results unremarkable. She was treated with intravenous antibiotics and received blood transfusion. Her abdominal pain and diarrhoea improved. There is no family history of any bowel disorder. Her stool sample culture was negative. Calprotectin was >1000 microgram/gm raising suspicion of IBD. Ultrasound abdomen showed 'some faecal loading in caecum and ascending colon', otherwise unremarkable. She was discharged with plan for colonoscopy within 4 weeks.

#### Abstract P10 Table 1 Tumour Characteristics

Histology	Poorly differentiated signet ring cell/mucinous adenocarcinoma with localised tumour perforation and serosal involvement; MMR protein proficient
TNMB Staging	pT4a pN2b, V1, R0
KRAS, NRAS, BRAF mutation	Not detected
CEA	2 ug/L (0–5)
Post-Surgery CT scan	No evidence of mediastinal or axillary node involvement; no pulmonary or liver metastases.

Three weeks later she re-attended with acute severe abdominal pain and was re-admitted under gastroenterology team. She had an extremely tender abdomen with guarding in right iliac fossa. CT abdomen showed localised perforation in ascending colon with a mass and extensive fat stranding. She underwent an emergency laparotomy, right hemicolectomy with ileostomy formation.

**Results** The details of the resected tumour are given in table 1 below.

She was referred to Adult Colorectal Surgical and Oncology team and was started on adjuvant chemotherapy following MDT discussion.

**Discussion** Diagnosis of CRC in paediatric patients remains an incidental finding due to nonspecific symptoms and low level of suspicion. Therefore, it usually gets diagnosed at advanced stage and bears poor prognosis. Although CRC is more common in older adults its incidence is increasing in younger age group including <20-year olds. Mucinous adenocarcinoma comprises >50% of all paediatric CRC and has a poor prognosis.

**Conclusion** Though CRC presents with non-specific symptoms in children and adolescents, this case is presented to raise awareness of its possibility. Input from the Adult Colorectal MDT is recommended for further management.

P11

#### CHARACTERISTICS OF CHILDREN WITH INTUSSUSCEPTION IN PEUTZ-JEGHERS SYNDROME IN A SPECIALIST CENTRE OVER A 10 YEAR PERIOD

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10.1136/flgastro-2021-bspghan.22

**Introduction** Children with Peutz-Jeghers syndrome (PJS) are at high risk of intussusception and bowel resection from small intestinal polyp formation. Little data has been published on early warning signs and prevention. We contributed to recent ESPGHAN guidelines, which recommend to start screening investigations from the age of 8 years in 3-yearly intervals. In spite of meticulous endoscopic and imaging screening, three of our patients developed intussusceptions.

#### Aim

1. To identify patient characteristics and polyp features in PJS patients with intussusceptions compared to patients without this complication.