for cerebrovascular, metabolic and thrombotic risk factors. This is expensive and it is unclear how often a positive result alters clinical management.

Aim To investigate the (i) diagnostic yield and (ii) impact on treatment of a extensive panel of investigations for childhood AIS risk factors in patients seen in a single tertiary paediatric neurology unit.

Methods Children (>28 days old) with radiologically confirmed AIS seen at our centre 2000 – 2011 were eligible. Since 2000 local guidelines have recommended a standard panel of investigations[1] and patients have been managed according to national clinical guidelines. Results and impact on treatment were abstracted from case notes.

Results Data from 51 children was reviewed (24 male, age 6 months – 16 years, median 5 years). Cerebrovascular imaging and screening for prothrombotic disorders was most comprehensive; metabolic and infection investigations were largely incomplete.

8/51 patients had prothombotic risk factors (4 MTHFR homozygous, 1 positive lupus anticoagulant, 2 protein S deficient, 1 Factor V Leiden heterozygous) but these did not alter clinical management. 1 patient was anaemic (requiring blood transfusion) and another had hypercholesterolaemia (treated with statins). Evidence of past infection was frequently identified but did not alter management. In contrast, magnetic resonance angiography (of the circle of Willis and cervical vasculature) was abnormal in 41/51, and influenced onward management in 43 cases. Echocardiography was abnormal in 11/35 available reports. 1 patient had infective endocarditis to which their stroke was attributed and 8 patients had congenital structural abnormalities of varying significance.

Conclusions Laboratory investigations for paediatric AIS patients have a low diagnostic yield and rarely alter treatment decisions. Cerebrovascular imaging is often fruitful and is key to management. These data may contribute to prioritisation of health care spending related to the investigation of childhood AIS. Wider laboratory evaluation may, however, be indicated in individual cases, dependent on the clinical circumstances.

REFERENCE

1. Kirkham FJ. Stroke in childhood. Arch Dis Child. 1999; 81: 85–89.

G189 15 YEAR EXPERIENCE OF CLINICAL PRESENTATION OF INTESTINAL VOLVULUS AT A QUARTERNARY GASTROENTEROLOGY CENTRE

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Introduction Intestinal volvulus can cause potentially fatal bowel ischaemia and/or obstruction. Diagnosis can be difficult and easily missed. Presenting symptoms are variable and there are no published studies describing the clinical presentation in children. Earlier diagnosis may reduce morbidity and mortality. Malrotation is a common underlying cause of volvulus and can be asymptomatic, or present with varied gastrointestinal symptoms at all ages[i].

Aims To describe our experience over 15 years of the presenting symptoms, age and past history of children presenting with volvulus.

Methods This study is based on a case notes review of: All children on the gastroenterology data base presenting with volvulus over the past 15 years.

Results 30 cases were reviewed. The age at presentation was variable with 24/30 (80%) presenting by 11 years, leaving a significant minority not presenting until adolescence. The majority of children (90%) presented with vomiting but in a third of cases it was non-bilious. Only 6/30 (20%) of children presented with all the classic symptoms and signs of volvulus: bilious vomiting, abdominal pain, abdominal distension, and constipation. The majority of children (18/30) had a past history of recurrent abdominal pain for which medical attention had been sought. 11/30 (37%) had a past history of unexplained vomiting and 8/30 (27%) had previous isolated nausea. The minority of children (6/30) had no gastrointestinal symptoms prior to their acute presentation with volvulus.

Conclusion Presenting features of acute volvulus are variable and can be confusing. An awareness of the possibility that symptoms and signs may not be classic could be life saving for children and prevent a tragic missed diagnosis. Malrotation is a possible cause of highly non-specific symptoms and should remain part of the differential diagnosis in patients for whom a clear cause of chronic gastrointestinal symptoms cannot be identified.

REFERENCE

1. NehraD, Goldstein AM. Intestinal malrotation: varied clinical presentation from infancy through adulthood Surgery 2011 Mar: 149(3):386–93

G190 COELIAC DISEASE AND RELATIONSHIP TO SOCIO-ECONOMIC STATUS

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Background and aims Coeliac Disease (CD) comprises an autoimmune enteropathy triggered by gluten. Population screening studies suggest a prevalence of 1% although many remain clinically undetected. It is a genetically determined disease but environment may play a role. The Aim of this study was to establish whether there is a relationship between socio-economic status and diagnosis of CD in childhood.

Methods Bristol Children's Hospital is the single regional centre where children from Bristol and SW of England with suspected CD are referred. Prospective data on all children undergoing diagnostic endoscopy is kept and includes postcode of residence. Data on children between 1997 and 2011 and aged 16 years or younger at diagnosis has been analysed. The post code was used to determine index of multiple deprivation (IMD IO) score and rank. The score is a nationally consistent measure of how deprived an area is, pulling together individual indicators chosen to cover a range of economic, social and housing issues to provide an overall measure of socio-economic deprivation.

Results 467 children (293 females and 174 males) were diagnosed with endoscopy proven CD. The mean age at diagnosis was 89 months. 73 had a postcode within Bristol City. The study found a strong independent graded association between the incidence rate of CD and socio-economic status. The incidence rate of CD in SW of England was twice as high in the least deprived quintile compared to the most deprived, and in Bristol City it was three times as high.

Conclusion There is a strong association between the incidence rate of CD in children and socio economic status with a higher incidence in those who are least deprived suggesting environmental factors may be important.

G191 THE MOZART EFFECT IN CHILDREN WITH EPILEPTIC EEGS

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Background Listening to Mozart's Sonata for two pianos in D major (K448) has been found to enhance higher brain function such as spatial temporal reasoning and to have an anti-epileptic effect, demonstrated on EEGs (electroencephalograms).

Aim The aim of this study was to establish if the anti-epileptic effect of Mozart music on EEGs is present in children.
Methods Forty five children aged 0-18 with EEGs showing epileptiform activity were included in the study. They were selected opportunistically, from those attending for routine EEG analysis who had epileptic EEGs. Mozart's Sonata for two pianos in D major (K448) and an age-appropriate control music were used. Epileptic EEG activity was measured in five states, each lasting 5 minutes; before Mozart music (baseline), during Mozart music, after Mozart music/before control music, during control music and after control music. The results were analysed manually.
Results A significant reduction ($p<0.0005$) in the frequency of epileptic discharges was found during listening to the Mozart music compared to the baseline. No significant difference was found between the baseline and the other three states. No significant difference was found between during listening to the Mozart music and during listening to the control music.
Conclusion This study confirms an anti-epileptic effect of Mozart music on EEG activity in children, with a significant reduction in the frequency of epileptic discharges during listening to the Mozart music compared to the baseline, which was not present when listening to the control music. This study warrants further investigation into whether this effect could be achieved with other similarly structured music to Mozart. It opens doors to investigation into the long-term use as a therapy for epilepsy and to enhance understanding of epileptogenesis. Given the large proportion of children suffering from refractory epilepsy and the financial burden of epilepsy medication, a new therapy would be welcomed.

G192 THE USE OF FAECAL CALPROTECTIN IN PAEDIATRIC INFLAMMATORY BOWEL DISEASE

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Aims To evaluate the use of faecal calprotectin (FC) in children with suspected inflammatory bowel disease (IBD) in the previous year, and to establish if the number of negative endoscopies had been minimised without missing any cases of IBD. To assess the use of FC in established paediatric IBD. To analyse the cost benefit of the test.
Methods A retrospective analysis of FC measurements carried out between 1st October 2011 and 30th September 2012. FC measurements were obtained from the biochemistry department. Following a computerised search of the departmental records the presenting complaint, endoscopy result if applicable, diagnosis of IBD or alternative diagnosis, and follow-up or discharge were recorded for each patient. Patients were divided into those who were scoped based on their FC value and those who were not. Established IBD patients who had a FC test as part of their disease management were treated as a separate group.
Results 36 patients (55%) were not scoped. All 36 had at least one symptom indicative of IBD. 25 of these had a FC value of $<50\mu g/g$. 4 of these patients had a FC result $> 200\mu g/g$. None of these patients have been diagnosed with IBD. 17 patients were scoped (26%). 3 of these patients were diagnosed with IBD. Median FC for the group that were not scoped was $30\mu g/g$ (interquartile range (IQR) 30–$760\mu g/g$), compared with $126\mu g/g$ (IQR 52 –$1{,}590\mu g/g$) in the group that were scoped. 8 patients with known IBD had a FC test when they became symptomatic and all FC values were consistent with GI inflammation. Overall, there was a 38% cost saving due to 44 unnecessary endoscopies being avoided.
Conclusion FC is a valuable test for excluding IBD in patients who present with abdominal pain and diarrhoea. FC can confirm relapse in symptomatic patients known to have IBD. When the test is used in these ways patients avoid an invasive procedure and the hospital is saved the cost of the endoscopy. However, guidelines are required to ensure the correct and appropriate use of this relatively new test.

G193 THE ROLE OF ACUTE RESPIRATORY EVENTS IN CHILD DEATHS DUE TO NEUROLOGICAL CONDITIONS AND CONGENITAL ANOMALIES

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Aims To determine the role of acute respiratory events mentioned on death certificates of children dying of a neurological condition or a congenital anomaly in the UK.
Methods Data on causes of death, extracted from death certificates from 11262 children who died between 2006 and 2010 aged one to 18 years, were obtained from national statistics agencies in England and Wales, Scotland and Northern Ireland. We scrutinised all causes of death for children whose underlying cause was a neurological/perinatal condition or a congenital anomaly to determine whether an acute respiratory event had occurred. An acute respiratory event was defined as acute upper and lower respiratory tract infections and acute respiratory failure. The proportion of children whose death certificate mentioned an acute respiratory event was estimated overall and by age-group (1–4, 5–9, 10–14 and 15–18 years).
Results 1433 children died from a neurological/perinatal condition and 867 children died from a congenital anomaly in the study period, representing 12.7% and 7.7% of all deaths. Among children dying of a neurological/perinatal condition, 470 (32.8%) death certificates mentioned an acute respiratory event. The prevalence of acute respiratory events varied by age, from 78/470 (16.6%) in 5–9 year olds to 154/470 (32.8%) in 1–4 year olds. Among children dying of a congenital anomaly, 201 death certificates mentioned an acute respiratory event (23.2%). Prevalence ranged from 29/201 (14.4%) in 10–14 year olds to 99/201 (49.3%) in 1–4 year olds. Overall, the most common acute respiratory events were unspecified pneumonia, recorded on 11.7% of death certificates (268 of 2300), unspecified bronchopneumonia, recorded on 10% (228 of 2300) and unspecified respiratory failure recorded on 9.3% (214 of 2300).
Conclusions Acute respiratory events are common contributing causes of death among children dying from neurological/perinatal conditions or congenital anomalies. Such events may represent a failure of chronic care or be part of an expected, planned death. Further research is needed to determine how to distinguish between these pathways of care.

G194 A 15-YEAR REVIEW OF OPEN VERSUS LAPAROSCOPIC BOIX-OCHOA FUNDOPLICATION

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Aim Boix-Ochoa Fundoplication is a established surgical treatment for gastroesophageal reflux disease. The surgical outcomes of this procedure have been compared to other types of Fundoplication in literature. There is no current publication comparing open to laparoscopic Boix-Ochoa Fundoplication. The aim of this study is to compare the outcomes of open versus laparoscopic Boix-Ochoa Fundoplication.