- Does the pOPAT service improve antimicrobial stewardship in the management of DBS infections?

Therefore, the objectives of this study were:

- Identify the pathogens that infect the DBS devices of children managed by the pOPAT service
- Identify the antibiotics used to treat DBS device infections of children treated in the pOPAT service
- Measure the effect of the introduction of the pOPAT service on paediatric DBS device infection outcomes, including surgical revision and removal of DBS devices
- Measure the effect of the introduction of the pOPAT service on the antimicrobial stewardship involved in the management of DBS device infections in children.

Methods Paediatric Neurology and Paediatric Infectious Diseases service databases were searched for children with DBS devices implanted between 2000–2020. Descriptive statistics were used to characterise pOPAT. Logistic regression models were devised to estimate the odds ratios of DBS device removal and revision under pOPAT. Mann-Whitney U and Fisher's exact tests were used to describe differences in antimicrobial stewardship.

Results Between 2000–2020, there were 211 children with DBS, 56 DBS device infections and 27 removals. Eleven of 56 infections were managed in pOPAT; 45/56 were managed in other settings. Adjusted odds ratio (aOR) for DBS device removal outside pOPAT was 9.11 (95% CI 0.95, 86.9; $p=0.055$). DBS revision outside pOPAT: aOR was 5.43 (95% CI 0.27, 111; $p=0.272$). The median length of antibiotic therapy was shorter in pOPAT (45 days vs 97 days; $p=0.044$). Managing infections in pOPAT was associated with better documentation of antibiotic therapy ($p=0.005$) and swab sampling ($p=0.002$). There was no difference ($p=0.333$) in the proportion of WHO AWaRe Access, Watch or Reserve antibiotics used to treat infections managed in pOPAT compared to other settings. Infections managed in pOPAT were more likely to be treated with ceftriaxone ($p=0.010$) and teicoplanin ($p=0.008$). There were ten different bacteria identified as the causative agent of DBS device infections in children. Of these, the most common were skin commensals, such as *Staphylococcus aureus* (21/38 results) and *Staphylococcus epidermidis* (4/38 results).

Conclusions The pOPAT service has conferred clear benefits in antimicrobial stewardship. There is suggestive evidence that pOPAT may be associated with DBS devices surviving infection without explantation. The service should continue to treat DBS device infections and maintain high standards in antimicrobial stewardship.

Quality Improvement and Patient Safety

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IMPACT OF IMPLEMENTATION OF REFERRAL PATHWAY FOR ABDOMINAL PAIN ON INITIAL ASSESSMENT TIME, INVESTIGATIONS REQUESTED, IMAGING PERFORMED AND EVENTUAL OUTCOME

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Background In our trust, historically paediatric patients presenting with abdominal pain raising suspicion of appendicitis were referred directly to surgeons and assessed in the Paediatric Assessment Unit. These patients faced long wait times for management plan by surgeons:

- who also covered theatres/adult wards and intensive care
- waiting for blood and imaging investigation results before finalizing a plan.

This led to delays and affected flow of patients through the PAU and the ward capacity. The Paediatric team decided to bring about a change in the abdominal pain referral pathway by proposing to see all patients referred with abdominal pain and then if deemed appropriate to refer to surgeons.

We collected data over 2 periods; 2018 and 2020, with the implementation of the new pathway in 2019

Objectives To assess:

- time to first review by a team (paediatric vs surgical)
 - percentage of patients
 - with abdominal pain referred to each team
 - who had blood tests and imaging requested by each team
- discharged, observed, referred and admitted by each team

Methods

- Sample period: 4 weeks in 2018 and 6 weeks in 2020
- Inclusion criteria: all paediatric patients referred with abdominal pain to PAU
- Exclusion criteria: anyone with previous appendectomy or re-attending.
- Data collection: retrospective.
- Case notes: reviewed for referral record, review times, and initial diagnosis
- Electronic patient management system: reviewed for blood test and imaging investigation requested and discharge summaries

Results Primary care referral rose from 36% in 2018 to 47% in 2020 with a concurrent shift in ED referral from 53% to 37% in 2020 showing the effect of the new pathway. Only 26% of referrals were made to Paediatric team in 2018 vs 87% in 2020

Majority of patients were seen within 4 hours by the Paediatric team in both episodes 86% vs 85%. There was very slight improvement in Surgical team review time 78% vs 80%.

There was an increase in discharges to 58% by the surgical team in 2020 from 35% in 2018. However, we also saw the increase in referral by the Paediatric team to surgical team from 7% to 33%

There was an impressive reduction in blood investigation requested by the Surgical team from 90% to 58%. Requests for imaging by surgical teams reduced from 33% to 17%.

88% of the referred patients with abdominal pain had medical diagnosis at discharge and did not need any surgical intervention

Conclusions Summary:

Re-auditing after implementing new Surgical abdominal pathway shows:

- Overall patient flow through PAU has improved as more patients are being discharged.

- Appropriate reduction in laboratory investigation 2018 vs 2020 (both by surgical team from 90% to 58% and Paediatric team from 43% to 17%)
- Optimization of imaging resources by surgical team from 33% to 17%
- 88% of patients with abdominal pain had a medical diagnosis at discharge.

Conclusion:

- Abdominal pain is a common presentation in the paediatric population, mostly benign and self-limiting.
- Abdominal pain should be assessed by General Paediatrician first and then referred to surgical colleagues to avoid unnecessary investigations and imaging and improve timeliness of their assessment.

British Academy of Childhood Disability

158 TRIHEXYPHENIDYL FOR TREATMENT OF DYSTONIA IN CHILDREN WITH NEWLY DIAGNOSED CEREBRAL PALSY: A RANDOMIZED PLACEBO-CONTROLLED TRIAL

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Background Cerebral palsy is a common and a lifelong disabling neurodevelopmental disorder, we attempted to address the relative lack of evidence on the role of Trihexyphenidyl in the management of dystonia in children with cerebral palsy

Objectives To study the short-term effect of trihexyphenidyl on dystonia and motor functions in children with newly diagnosed Cerebral Palsy.

Methods A randomized, double-blinded, placebo-controlled, parallel-group trial was conducted in consecutive children aged 6 months-5 years at a tertiary care hospital. Following baseline evaluation, the study participants were randomized into two groups and were started on medication. Assessments were performed at baseline, 3, 6, and 12 weeks. A total of 50 children completed the study.

Results After 12 weeks of medication, statistically significant improvement in median scores of GDS was seen in 10 body regions in the intervention group as compared to only 4 body regions in the control group and significant improvement in GMFM 88 in both the groups. The motor status assessed using GMFCS showed that there was a reduction in GMFCS level in 4 children in the intervention group as compared to 1 child in the control group. DQ calculated using EDP-2 showed a significant change in the intervention group (p-value 0.026) at the end of 12 weeks but no change in the control group (p-value 0.218). However, no statistically significant difference was seen in the median change in outcome scores between the two groups.

Conclusions This study could not document a statistically significant change between the two groups for the effect of trihexyphenidyl. A larger placebo-controlled trial, preferably multi-centric and with a longer follow-up period is needed to provide definitive results regarding the place of trihexyphenidyl in the management of dystonia in children with Cerebral Palsy.

British Society of Paediatric Endocrinology and Diabetes

159 THE RISE OF DISORDERED EATING PATTERNS IN PAEDIATRIC DIABETES: A LITERATURE REVIEW

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Background Type 1 Diabetes Mellitus (T1DM) is one of the most common chronic childhood illnesses, with life-long implications for the child or young person (CYP). A preoccupation with food, eating and weight, integral to optimal diabetes care, coupled with a peak diabetes onset in early adolescence, inevitably increases the propensity of this cohort to develop disordered eating behaviours (DEB) and/or eating disorders (ED). Current UK diabetic services grossly underestimate the problem with our own service capturing only a 0.08% ED rate among 620 CYP with T1DM across three trusts, compared to study prevalence rates ranging from 10–30%. This discrepancy urgently needs addressing so CYP vulnerable to DEB/ED can be identified and offered appropriate therapeutic interventions.

Objectives The aim of this literature review is to identify, summarise and critically appraise works evaluating the development, impact and management of DEB/ED in paediatric diabetes, with the hopes of increasing awareness of a clinically important, but scarce discussed phenomenon.

Methods A search was conducted on Embase, MEDLINE and PsycINFO for studies concerning T1DM, ED/DEB and CYP, published between 2000 and 2020. Cross-referencing searches were conducted for articles not detected in the original keyword search; key national guidelines and diagnostic criteria were also reviewed.

Results 35 studies met the inclusion criteria. T1DM was shown to be a key contributor to the complex and multifactorial aetiology of DEB/ED. The majority of studies showed increased DEB/ED among CYP with T1DM compared to their peers, and where they did not, rates of sub-threshold ED were still higher. Studies were limited by small sizes, variable DEB/ED definitions, cohorts extending to young adult populations, participant recall bias and diverse screening tools, ranging from generic ED surveys to diabetes-specific measures, which though showing greater sensitivity, made control comparisons more challenging. Only 9 intervention trials were included, exploring a range of strategies from family therapy, nutritional psychoeducation, individual and group cognitive behavioural therapy (CBT), and inpatient stays. All strategies emphasised the need for a collaborative approach between medical and psychiatric teams. The detrimental impact of DEB/ED on quality of life, metabolic control, secondary complications, and life expectancy, only highlighted the necessity of timely therapeutic intervention.

Conclusions Disordered eating can be a significant problem in T1DM, beginning in early pre-teen years, becoming more prevalent in adolescence and often extending into adulthood, where it becomes significantly more challenging to manage. In the first instance, we must begin to identify risk factors for disordered eating in our diabetic clinics; referring those we are concerned about for a more rigorous psychological assessment. The gold standard, time and financial pressures permitting, would be for universal screening from age 10, with a