G241(P) CIDOFOVIR IN SEVERE ADENOVIRUS INFECTION IN AN IMMUNOCOMPETENT CHILD: A CASE REPORT AND REVIEW OF THE LITERATURE

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Adenovirus infection is self-limiting in immunocompetent children but can be severe and potentially fatal in immunocompromised children. Cidofovir is used in severe Adenovirus infection in immune compromised paediatric patients as standard practice but its use in immunocompetent children with severe disease is not well described.

We used Cidofovir successfully in a 5-month-old infant with severe Adenovirus infection. Born at 30 weeks gestation weighing 475 g, she suffered from chronic lung disease and presented with a clinical bronchiolitis illness proven to be due to adenovirus. The infection progressed rapidly to severe lung disease needing nitric oxide, high frequency ventilation and inotropes. Initial Adenovirus viral load was 43,000 copies and following MDT discussion and counselling of the family, a 5 mg/kg once weekly course of Cidofovir was administered. Her viral load increased to a maximum of 444,000 copies but this improved to < 400 following treatment. No nephrotoxicity was experienced; she recovered from her illness and was discharged to her local hospital

We undertook a systematic review of the published evidence of the use of Cidofovir in children and identified 40 articles of which 29 were relevant. The majority of literature reports the use of Cidofovir in immune compromised children with Adenovirus or CMV infection. There was limited evidence of its use in immunocompetent children. The mortality rate of severe adenovirus infection is high in children who are immune compromised, but no clear evidence of benefit in Cidofovir use was identified in the paediatric studies reviewed. A recent report of early use in adenovirus infection in 7 immunocompetent adults suggested evidence of possible benefit.

A common side-effect of Cidofovir is nephrotoxicity, with up to 28% of patients reported to develop evidence of renal dysfunction. Alternative dosing regimens are recommended if patients are nephropathic or at high risk of acquired renal injury

We weighed the potential benefit of treatment against the risk of nephrotoxicity in our patient and successfully treated a potentially fatal illness. We believe that Cidofovir could be used in immunocompetent patients with severe adenovirus infection but acknowledge that further research evidence is required before this treatment can be recommended.

G242(P) DOES THE SEPSIS SCREENING TOOL USED IN THE PAEDIATRIC EMERGENCY DEPARTMENT HIGHLIGHT CHILDREN AT RISK OF SEPSIS AND WHAT IS THE RELATIONSHIP OF INITIAL BPEWS SCORE TO PATIENT OUTCOME

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Aims This study of children seen in the paediatric emergency department set out to determine how useful the sepsis screening tool was in alerting clinicians to unwell potentially septic children, and to establish if the initial BPEWS (beside paediatric early warning score) was predictive of admission.

Methods A retrospective study of the electronic patient records for patients who had triggered on the sepsis screening tool over a 4 month period. Information gathered included initial BPEWS with breakdown for each parameter, and the outcome – discharged or admission (admission included children observed in the clinical decision unit or use of the nursing outreach service).

Of those who required admission, further information was gathered as to final diagnosis, whether antibiotics were given (IV or oral) and the microbiology results.

Results In the study period 719 patients triggered on the sepsis screening tool of which 713 were analysed. 172 of these were admitted (24%), and of these only 1 had an invasive bacteraemia.

Respiratory infections were a common cause of illness with 19% (33) having upper respiratory tract infection and 17% (29) having lower. 16% (27) of those admitted were ultimately diagnosed with viral induced wheeze. 63 (37%) were positive for one or more viruses on respiratory or stool samples.

Correlation analysis of the BPEWS showed that the higher the initial BPEWS, the more likely that children would be admitted. There was a correlation of 95% between these variables and chi squared analysis of the relationship showed a significant p value of <0.01.

Conclusion Whilst large numbers of children triggered on the sepsis screening tool, 76% were not admitted and thus raises questions as to the sensitivity of the tool. Increasing BPEWS was found to be predictive in identifying children who require admission. This suggests that perhaps the tool requires some adaptations, such as using high BPEWS as a significant trigger, to allow it to be more sensitive and applicable for this population and workforce.

G243(P) WOULD THE INTRODUCTION OF KETAMINE SEDATION FOR FACIAL WOUND CLOSURE IN THE PAEDIATRIC EMERGENCY DEPARTMENT REPRESENT PRUDENT HEALTHCARE?

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Aims Facial lacerations are a common presentation to the Paediatric Emergency Department (PED). Wound closure with sutures can be challenging in children due to agitation, therefore non-compliant children may need to be sutured under general anaesthesia (GA). Ketamine is a safe alternative to GA and would drastically reduce hospital admissions and associated costs for this procedure. We aimed to establish whether the introduction of a Ketamine sedation list would represent prudent healthcare; both economically and in terms of optimising resources without compromising patient safety.

Methods Children 0–15 years referred to Maxillofacial surgeons (OMFS) with facial lacerations for wound closure over a 12-month period (01/04/18 – 01/04/19) were identified using hospital coding. Information of their injury and

treatment was extracted from digital health records. Patients sutured under GA were reviewed for contra-indications to Ketamine, determining the number potentially suitable for procedural sedation in retrospect. A literature search was used to identify healthcare costs of laceration closure under GA, versus the same procedure under Ketamine sedation. Admission cost per patient was gained by communication with relevant ward managers. Retrospective economic savings were calculated to ascertain the theoretical annual savings of introducing a Ketamine sedation list in the PED.

Results 234 patients were referred to OMFS for facial lacerations. 162 (69.2%) of these were deemed to require closure with sutures. 107 were able to tolerate closure under local anaesthetic while 55 required admission and suturing under GA. Of the children sutured under GA, 47 (85.5%) were deemed to be retrospectively suitable for Ketamine sedation and the remaining 8 (14.5%) had contra-indications. The cost saving of using Ketamine sedation over GA is £69 per patient and the admission cost per patient per day is £306. The retrospective theoretical annual healthcare saving was approximately £18,543.

Conclusion There is scope for introduction of a procedural Ketamine sedation list for paediatric facial lacerations that are currently being sutured under GA. This would reduce healthcare costs dramatically as well as optimising resources in the PED.

G244(P) TREATMENT OF FEVER IN CHILDREN WITH SICKLE CELL DISEASE

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Aims Fever is an important sign in children with sickle cell disease (SCD), often being the only indicator of serious and potentially life-threatening secondary bacterial infection. Treatment of febrile children with SCD in our Paediatric Emergency Department (PED) can be variable, including escalation of care of those who are unwell and pragmatic management of those who are well. We therefore audited the management of fever with SCD presenting to PED and developed guidance to aid management, particularly looking at whether ambulatory nursing teams can be utilised to manage 'low-risk' patients.

Methods We analysed the management of SCD children presenting to PED with fever over a one year period. Using these results, we developed guidance for febrile children with SCD, based on risk stratification.

Results 28 children with SCD presented between July 2018 – July 2019, of whom 22 were admitted and 6 discharged from PED. Diagnoses among these patients are displayed in table 1.

Antibiotic treatment was consistent in the management of fever due to acute chest syndrome, but was otherwise variable. One third of children discharged (2/6) received oral antibiotic treatment to complete at home. None of the discharged children were referred to the ambulatory nursing team for review. Subsequently we developed guidance to standardise clinical assessment, direct antibiotic choice, give clear risk-stratification criteria and advice on management of low-risk fevers of SCD children in the community.

Abstract G244(P) Table 1 Diagnoses among febrile children with SCD presenting to PED

Outcome	Diagnosis	Number
Admitted:	Acute chest syndrome	11
	Vaso-occlusive crisis: abdominal	7
	Vaso-occlusive crisis: limb	2
	Fever without obvious source	1
	Influenza	1
Discharged:	Upper respiratory tract infection	2
	Vaso-occlusive crisis: limb	3
	Peri-orbital cellulitis	1
		Total = 28

Conclusions Fever may indicate serious bacterial infection in children with SCD, requiring prompt and specific antibiotic treatment. Implementation of a guideline will help tailor treatment to the most likely cause of fever and risk-stratify these children accordingly. Utilisation of ambulatory nursing teams should be encouraged to promote admission avoidance and ensure low-risk children can be managed safely at home.

G245(P) ESTIMATING WEIGHT IN PAEDIATRIC TRAUMA PATIENTS – AN ONGOING CHALLENGE WITH A NEW SOLUTION

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The administration of drugs and fluid, most of which are given as the dose per kg of body weight, is a vital component in the management of the seriously injured child. Obtaining an accurate weight on arrival may not be immediately achievable because of instability, immobilisation and ongoing resuscitation.

The paediatric STAG (Scottish trauma audit group) data from * hospital was used to identify patients over 12 months. Clinical notes were reviewed to assess if weight was estimated or accurately measured.

56 paediatric trauma patients who met the STAG inclusion criteria presented to * over the 12 month period.

27/56 (48%) patients had an estimated weight on arrival; 5 were estimated using the 'old' APLS formula, 12 using the 'new' formulae and for the remaining 10 the method used was unclear.

Of those who initially had an estimated weight only 7/27 (26%) went on to have an accurate weight obtained at any time during their admission. In 5 patients, weight was underestimated (mean -12%) and in 2 patients, weight was overestimated (mean +19%). The weight estimation error ranged from negative 28% to positive 20%. Assessing the percentage error of estimated weight was challenging in this group of patients due to the small number on which an accurate weight was measured during this admission. Poor documentation may have been a contributing factor in some cases with the weight on a patient's drug kardex only being clearly identified as being an 'estimated' value in 66% of patients.