The main indication for MRI was headache waking at night (16%) and an atypical headache (16%). 32% of patients had a previous MRI either for a different indication or done by the referring hospital prior to headache clinic.

Outcomes were positive with 71% of patients symptoms improving or completely resolving. 28% of patients had no improvement in symptoms. The most common treatments were Sumatriptan (43% of patients) and Ibuprofen (26% of patients), 21% of patients were medication free at the last appointment.

Conclusion Management of headache in children in our specialist tertiary clinic shows largely positive outcomes in improvement of symptoms. MRI was requested for majority of patients with no serious pathology identified in any patients. We suggest that while MRI is a useful tool, careful assessment and management of the symptoms may be able to avoid unnecessary investigations in majority some patients and improve their symptoms.

G328(P) RISK OF TRANSVERSE MYELITIS FOLLOWING ZIKA VIRUS INFECTION

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Introduction Transverse myelitis (TM) is a neurological disorder causing acute cord injury as a result of acute inflammation, and it is often associated with infectious or autoimmune disease. 20% of all cases of TM occur in children.

Since 2015, an outbreak of Zika Virus infection (ZiKV) has been reported in over 30 countries. Emerging evidence suggest ZiKV causes a spectrum of neurologic diseases. However, its association with TM, especially in children, is not well described.

Methods We undertook a systematic review of the English literature published from 1947 to August 2017 to evaluate the risk factors, distribution, pathogenesis, clinical presentation, management and outcomes of TM following Zika virus infection. Data sources included MEDLINE, EMBASE, Cochrane library, and references within identified articles. We also searched the papers using the ISI web of knowledge, to identify relevant articles and conference proceedings.

Results We identified 102 potential studies, of which 9 were duplicates and 89 were excluded on the basis of title and abstracts. Of the 4 eligible studies [5–8], there were 6275 with suspected ZiKV in all age groups. 695 cases were confirmed ZiKV either by RT-PCR in plasma, CSF and urine, ELISA or MRI while excluding other aetiologies. There were 11 (1.6%) cases of TM. Among 3 studies reporting clinical characteristics and outcome, the mean age was 23 years (Range 15–43) and 63% (n=5/8) of cases were male. 40% (n=4/10) required admission to the ITU, with no reported case fatality.

Conclusions and clinical implications

Complications from ZiKV, although uncommon, may be severe. With international spread, clinicians need to be aware that ZiKV may be associated with TM. As only 10% of cases were children, standardising the collection and reporting for individual cases across regions and countries would further allow meaningful analysis of the data collected, enabling monitoring of trends over time.

G329(P) RISK OF SEIZURE FOLLOWING ZIKA VIRUS INFECTION IN CHILDREN

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Introduction Since 2015, an outbreak of Zika Virus infection (ZiKV) has been reported in over 30 countries. Emerging evidence suggest ZiKV causes a spectrum of neurologic diseases both directly and by secondary autoimmunity. In pregnancy, ZiKV is a well-known cause of congenital brain abnormalities, including microcephaly, and has been linked with Guillain-Barre syndrome. However, its association with seizures in children is not well described.

Methods We undertook a systematic review of the English literature published from 1947 to August 2017 to evaluate the risk factors, epidemiology, clinical presentation, management and outcomes of seizure following Zika virus infection in children less than 18 years. Data sources included MEDLINE, EMBASE, Cochrane library, and references within identified articles. We also searched the papers using the ISI web of knowledge, to identify relevant articles and conference proceedings.

Results We identified 140 potential studies, of which 8 were duplicate and 122 were excluded on the basis of title and abstracts. A further 2 additional studies did not meet eligibility criteria. Of the 8 eligible studies [3–10], there were 215 with confirmed ZiKV in children less than 18 years by either RT-PCR in plasma, CSF and urine, EEG and MRI while excluding other etiologies. 20% (n=44) cases of had seizure. Among 5 studies reporting clinical characteristics and outcome, the mean age was 5 months (Range 1–8 months) and 75% (n=12/16) of cases were female. All had abnormal neuroimaging (n=44) and responded to anti-convulsant therapy, with no reported mortality.

Conclusions and clinical implications Complications from ZiKV, although uncommon, may be severe. With international spread, clinicians need to be aware that ZiKV may be associated with seizures in children. Therefore, standardising the collection and reporting for individual cases across regions and countries would further allow meaningful analysis of the data collected, enabling monitoring of trends over time.

Association of Paediatric Emergency Medicine

G330 THE PREVIEW TRIAL – A PROSPECTIVE, RANDOMISED, DOUBLE-BLIND, PLACEBO CONTROLLED TRIAL ASSESSING ORAL PREDNISOLONE IN PRE-SCHOOL AGED CHILDREN WITH VIRAL ASSOCIATED WHEEZE

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Background Pre-school aged children experience frequent episodes of wheeze that follow a different clinical course to

asthma in adolescents and adults. The beneficial role of corticosteroid administration in reducing the need for hospitalisation in asthma episodes in adults has been demonstrated, however the evidence supporting corticosteroid use in pre-school aged children with acute wheeze exacerbations is less robust.

Aim To assess the efficacy of oral prednisolone in pre-school aged children presenting to a paediatric emergency department (PED) with viral associated wheeze.

Methods A superiority analysis of the randomised, double-blind placebo controlled trial, comparing the effect of a 3 day course of daily oral prednisolone (1 mg/kg/day) with placebo on the primary outcome of length of hospital stay in children (aged 24 to 72 months) presenting to a tertiary PED with VAW.

Results Between June 2012 and June 2015 we randomised 624 eligible patients with 605 (300 placebo and 305 prednisolone) being available for full analysis. The 'ready for discharge' length of stay (LOS) was significantly reduced in the prednisolone group (median [interquartile range] 370 min [121, 709]) compared to placebo (median [interquartile range] 540 min (124, 971)); the unadjusted ratio of geometric means for LOS was 0.79 (95% CI; 0.64, 0.97; $p=0.0227$, $n=605$). The prednisolone group had significantly reduced risk, relative to placebo group, of the LOS exceeding either 7 or 12 hours, adjusted RR 0.82 (95% CI; 0.69,0.96; $p=0.0166$) and 0.67 (95% CI; 0.51,0.86; $p=0.0018$) respectively. Subgroup analysis demonstrated efficacy (reduced continuous LOS, and reduced risk of LOS exceeding either 7 or 12 hours) for prednisolone among patients with more severe exacerbations. The absolute reduction (difference) in the percentage of patients with a LOS exceeding 12 hours (13.7%) represents a number needed to treat of approximately 8 patients to prevent the LOS of 1 patient exceeding 12 hours.

Conclusion Oral prednisolone demonstrated a clear benefit over placebo at reducing the LOS in children presenting to a PED with viral associated wheeze; with the greatest efficacy observed among patients with more severe features of wheeze.

G331 MANIPULATION UNDER 70% NITROUS IN A PAEDIATRIC EMERGENCY DEPARTMENT; THE EFFECTS AND CHALLENGES POST IMPLEMENTATION

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Aims The use of manipulation under sedation (MUS) of fractures in paediatric emergency departments (PED) has become increasingly popular. Numerous studies show MUS to be safe, effective, and reducing time to manipulation, number of MUAs (manipulation under anaesthetic) and time spent in hospital. Despite this there were many barriers and safety concerns to the introduction of MUS in our hospital. A MUS protocol using 70% Nitrous for upper limb fractures was introduced in December 2016 at our PED. The aim of our study was to evaluate this service regarding safety, cost effectiveness, barriers to its use and to evaluate admissions saved.

Methods An audit was conducted of all paediatric eligible forearm and wrist fractures requiring manipulation. Data was collected from two study periods (of 5 months) before and after implementation of protocol for comparisons, February–

July 2016 and same period in 2017. Data was collected on patient demographics, treatment modality, timings of presentation and treatments, and reasons eligible MUS were not undertaken.

Results In 2016, 36 patients who would have been eligible for MUS went on to have admissions and MUA. In 2017 there were 35 eligible patients, 20 who had MUS in the PED and 15 who had admission and MUA. Of the MUS group 100% were successful with no complications or requirement for further surgery and were discharged home within 4 hours. Of the 15 MUA, 11 (73%) the MUS was unable to occur because of staffing issues; presenting out-of-hours or the department being too busy. The average time of presentation of the MUS group was 16:42 and the MUA group 18:08, both out-of-hours for staffing levels. The MUS group waited an average 149 mins between presentation and definitive reduction, compared to 2.2 days in the MUA group. The cost saved per MUS case was average £1300.

Conclusion This study demonstrates MUS protocol in a PED is safe and cost efficient, providing a solution to the crises in inpatient beds and busy theatre lists. The biggest barrier to its regular implementation is staff availability out-of-hours. As a result of this study our department are creating a morning 'virtual list' within the ED, increasing MUS capacity within the current service.

G332 ACUTE TRAUMATIC COAGULOPATHY IN THE PAEDIATRIC POPULATION: A SYSTEMATIC REVIEW

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Introduction Acute traumatic coagulopathy is a clinically distinct coagulopathy resulting from the injury itself and subsequent hypoperfusion. The condition has been associated with increased morbidity and mortality in adults but little is known about the condition in children.

Objective This review aims to summarise current literature regarding the incidence of acute traumatic coagulopathy in a paediatric population and associated risk factors and outcomes.

Evidence review We carried out searches of Medline, EMBASE and Cochrane library databases as well as the following registries: clinicaltrials.gov, the European Union Clinical Trials Register and the International Standard Randomised Controlled Trial Number (ISRCTN) registry. Searches were limited to studies published from 2003, the point at which acute traumatic coagulopathy was defined. For each relevant study identified, reference and author specific searches were carried out. Finally, the grey literature was searched. Any study defining acute traumatic coagulopathy as an international normalised ratio (INR) >1.2, including individuals aged 17 or less with any type of traumatic injury was eligible.

Results We identified a total of nine studies that met the inclusion criteria. All studies were retrospective cohort studies deemed to be at low or uncertain risk of bias. Eight studies were conducted in trauma centres in the United States and one in combat support hospitals in Iraq and Afghanistan. Study populations ranged from 84 to 1531 participants. Acute traumatic coagulopathy was present in 31.7% (range 24.6%–40.9%). Mortality was 29.3% (range 21.2%–60%) in those