Case Report

G89(P) SINUSITIS: JUST ANOTHER CAUSE OF HEADACHE OR AN INNOCUOUS KILLER?

¹K Jayaprakash, ²S Kapoor, ¹C Royed. ¹Paediatrics, Kettering General Hospital, Kettering, UK; ²Paediatrics, University Hospital Leicester, Leicester, UK

10.1136/archdischild-2018-rcpch.87

A 13-year-old boy presented to A and E with left sided weakness, altered consciousness and right gaze deviation. His parents found him in on the morning of admission confused and aphasic. Over the preceding ten days, he had complained only of a headache with pain over the right eye but no other neurological symptoms. He had presented to the GP once prior to admission and was diagnosed with possible migraine. On examination, he was aphasic, confused with a GCS 11/15 and had left sided weakness. On initial presentation, he was afebrile with otherwise normal observations.

Investigations He had an urgent CT, which was reported as normal followed by an urgent MRI. MRI revealed right frontal subdural empyema with pneumatocoele and evidence of maxillary sinusitis. Blood investigations revealed a raised white cell count (20) with a neutrophilia (18) and raised CRP (217).

Treatment/outcome The patient received IV antibiotics, 3% saline and dexamethasone. Shortly after this, he was transferred to a neurosurgical unit and had an emergency right frontal craniotomy and drainage. Subsequently he required regular maxillary sinus washouts for four days. Bacterial culture revealed *Streptococcus milleri*. He received 6 weeks of IV antibiotics and has made a full neurological recovery. Repeat MRI reveals resolution of empyema and he has been discharged from secondary care.

Conclusions This case was chosen to highlight to paediatrician and primary care gives the potential serious sequelae of untreated sinusitis. Systematic review reports the morbidity rate as 27% and mortality rate was 3.3%.¹ Early aggressive medical, ENT and neurosurgical intervention has proven to improve neurological outcome.² Patients should also be evaluated from an immunological perspective, as serious sinogenic infections can be a sign of immunodeficiency.

REFERENCES

- Patel N, Garber D, Hu S, *et al.* Systematic review and case report intracranial complications of paediatric sinusitis. *Int J Pediatr Otorhinolaryngol* 2016 July; **86**:200–12.
- Patel AP, Masterson L, Deustch CJ, *et al.* Management and outcomes in children with sinogenic intracranial abscesses. *Int J Pediatr Otorhinolaryngol* 2015 June; **79** (6):868–73.

G90(P) I'M SORRY, BUT WE HAVE JUST GIVEN YOUR CHILD THE WRONG MEDICINE

A Klimach, K Cruse, D Tuthill. Paediatrics, Cardiff and Vale University Health Board, Cardiff, UK

10.1136/archdischild-2018-rcpch.88

Background Children are more at risk of medication errors than adults. Predisposing factors include: dosing by weight/age; multitude of dose strengths available; use of off license prescribing. The GMC and BMA encourage open, honest admission to families when errors occur.

Aims To evaluate families views on how they would like to be informed about medication errors.

Methods We devised a parental questionnaire asking if their child used medication and if they had experienced an error. Three scenarios for medication errors with; no/low/significant harm were presented along with 4 options as to how to be told:

1. Tell them over the phone immediately
2. If we can't contact them, leave an answer phone message that there is a problem
3. Tell them face to face when they return
4. Wouldn't want to be informed

Their preference for who would inform them was sought. Parents of any children attending/resident in hospital were eligible.

Results We asked 100 parents: 85 mothers and 15 fathers; 52 inpatients and 48 outpatients. 53% of the children were taking regular medications and 7% had experienced a medication error.

Abstract G90(P) Table 1

Informed by:	Scenario		
	No harm	Low harm	Significant harm
Phone	39%	69%	82%
Leave answer-phone message	6%	6%	8%
Face to face	49%	25%	10%
Not informed	6%	0	0

Parents preferred to be told by: a doctor 54%, nurse 10%, either doctor or nurse 32% and 4% did not mind. Several specified that this would depend on the severity of the error and who was most available.

Conclusions Most parents would like to be informed about a medication error by a doctor as soon as it is identified. If they are not present they would prefer to be contacted by telephone, although not via an answering machine message. Where no harm is expected, waiting until parents are present was generally acceptable to them (table 1). Trust between families and healthcare professionals is encouraged by honesty and openness. Best practice should be to provide information as soon as possible; however this may present logistical challenges to meet these expectations.

G91(P) PRESCRIBING IN OVERWEIGHT AND OBESE CHILDREN

¹S Kannan, ²L Storey, ³A Mott. ¹Paediatrics, Royal Manchester Children's Hospital, Manchester, UK; ²Medical School, University of Manchester, Manchester, UK; ³Pharmacy, Royal Manchester Children's Hospital, Manchester, UK

10.1136/archdischild-2018-rcpch.89

Aims Childhood obesity is a growing global health burden. Prescribing medications for this cohort has until now relied on empirical experience with no set guidelines to inform drug dose calculations. Standard body weight calculated dosages have led to suprathreshold doses commonly being prescribed. Recent research has highlighted the need for a new body weight adjusted approach to prescribing. This project aimed to evaluate whether these recent developments are being

translated into practice to provide safe and appropriate doses in children over the 91 st percentile for BMI (Body Mass Index)

Methods We chose 6 drugs (aciclovir, aminophylline, gentamicin, oromorph, paracetamol and phenytoin) that have particularly narrow therapeutic windows and a high risk of toxicity with suggested dosage adjustments based on ideal (IBW) or adjusted body weight (ABW) than actual body weight.

First a prescribing exercise was carried out using case scenarios in a group of paediatricians during a departmental teaching session in a tertiary children's hospital.

Next, over 4 weeks, all patients on the wards were screened for being overweight or obese. Children between the ages of 2 and 16 years with BMI over 91 st centile and on one or more of the listed drugs were included.

Results In the prescribing task we had 7 paediatricians from the level of Foundation Year 1 to Consultant. Out of the 42 individual question responses none were answered using the correct dose adjustment.

In the ward-based project, none of the 13 patients identified were prescribed the correct adjusted doses of their medications using IBW or ABW.

The maximum daily drug overdose was 149% for a prescription of paracetamol in an 11-year-old girl. The minimum daily drug overdose was 111%. The average daily drug overdose from what was being prescribed for obese children on the ward in this four-week window was 128%.

Conclusion We identified a lack of knowledge amongst paediatricians on prescribing in children with a BMI $\geq$ 91 st percentile although the sample size was small. There must be a call for more awareness and further studies to evaluate the mechanisms of altered pharmacokinetics in overweight and obese children to guide future drug dose adjustments and formulate universal guidelines.

G92(P)

4-YEAR EXPERIENCE OF USING HIGH FLOW NASAL CANNULA (HFNC) OXYGEN THERAPY ON PAEDIATRIC WARDS

F Roked, S Samar, D Jyothish. *General Paediatrics, Birmingham Women's and Children's Hospital NHS Trust, Birmingham, UK*

10.1136/archdischild-2018-rcpch.90

We describe our experience of using High Flow Nasal Cannula (HFNC) Oxygen on the paediatric wards during a 4 year period from January 2014 to October 2017. A standard operating procedure (SOP) provided instructions and guidance for the use of HFNC. Retrospective analysis of demographic data, clinical conditions, indications, HFNC settings, adherence to SOP, adverse events and safety profile was undertaken over the 4 year period. HFNC was used in 124 babies and children, for a variety of conditions requiring respiratory assistance. Bronchiolitis was the commonest indication for the use of HFNC, followed by pneumonia, viral induced wheeze, asthma, and for alleviation of respiratory distress at the end of life in palliative care situations. Relatively high flow rates compared to other centres of upto 4 Litres/kg was used, with no adverse effects such as air leaks. Conversion to NIV modalities such as CPAP and BiPap and intubation rates was comparable to other centres. Our findings agreed with previous studies that HFNC failure rates could be predicted by

the lack of response of respiratory distress and oxygen requirement, 60–90 min after commencing HFNC. Incremental expansion of the use of HFNC was seen over the study period as well as extension of its use to a variety of clinical conditions. This was achieved without additional medical resources, but by nursing empowerment through training for the safe initiation, weaning and cessation of HFNC, as well as timely escalation.

Our experience of the use of HFNC is unique in using high flow rates in large numbers of children with a wide variety of respiratory conditions, in a non-paediatric intensive care setting.

G93(P)

SEPSIS: A CAUSE OF SUDDEN UNEXPECTED DEATH AND A WORKING DEFINITION

¹NT Dlamini, ¹S Band, ¹A Tabor, ^{1,2}M Samuels. ¹Royal Stoke University Hospital, University Hospitals of North Midlands, Stoke on Trent, UK; ²Walrus Respiratory Unit, Great Ormond Street Hospital, London, UK

10.1136/archdischild-2018-rcpch.91

Background Some cases of sudden unexpected death in infants and children (SUDIC) occur from fulminant sepsis. There is no agreed definition for accepting this mechanism of death within SUDICs.

Aims To characterise the history, Emergency Department (ED) and post-mortem (PM) findings in children who died unexpectedly and in whom the likely diagnosis was sepsis and to make a working definition for Sudden Unexpected Death (SUDIC) due to Sepsis.

Methods We reviewed all SUDIC cases between 2008 and 2016 listed on the database for the local Child Death Overview Panel, and identified those thought to be due to natural causes. We then collected clinical details alongside the ED and PM findings to characterise which deaths were likely to be due to severe and overwhelming infection. Our early management of SUDIC includes the collection of samples as soon as possible after death for investigation of infection.

Results Over 8 years, there were 160 cases designated as SUDIC due to natural causes, of which 17 (11%) were from infection-related causes. We examined complete records for 12 children (7 girls), aged 4 months to 12 years (median 26 months). Three (25%) had preceding signs suggestive of infection, but insufficient to diagnose sepsis. Five of the other 9 children died from beta haemolytic group A streptococcus sepsis, one from beta haemolytic group B streptococcus sepsis, one from staphylococcus aureus sepsis, and one from Haemophilus influenza sepsis. In the remaining child, the cause of death was unascertained but 'likely sepsis secondary to streptococcal infection'.

Eight children were unwell for 48 hours, with a median duration of symptoms of 24 hours. Six had medical review before death. Symptoms included: fever, cough, coryza, unsettled, lethargy, vomiting and diarrhoea and all but one were managed as viral illnesses.

Conclusion Lethal sepsis can progress rapidly, but be difficult to distinguish from viral infection at onset. A working definition for SUDIC-sepsis includes: sudden death with i) prodromal symptoms; ii) a likely pathogen in a normally sterile site; and, iii) evidence of inflammatory reaction (such as raised CRP, WCC and histological changes).