

Consideration should be given to regular National remote teachings through Royal College of Paediatrics and Child Health so trainees mentioned above can stay connected with each other and benefit from remaining updated with clinical knowledge until their return to work.

Association of Paediatric Emergency Medicine

586

PUKING LESS PER POUND, FOR ACUTE WHEEZERS: QUALITY IMPROVEMENT IN A PAEDIATRIC EMERGENCY DEPARTMENT

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Background Acute wheezing attacks are a leading cause of Paediatric Emergency Department (PED) attendances and inpatient admissions and are a considerable burden on the NHS. Almost one-third of children vomit prednisolone in the PED, requiring anti-emetics and repeat dosing. Single-dose dexamethasone (600 mcg/kg or 300 mcg/kg) is a non-inferior alternative to a 3-day course of prednisolone (1 mg/kg), with the added advantage of improved tolerability and potentially reduced cost. Use of Dexamethasone within a structured protocol (which have shown some reduction in medication delivery times and length of stay (LOS)) would likely facilitate tolerability and PED patient flow.

Objectives This QI intervention aimed to improve Oral Corticosteroid (OCS) tolerability, reduce LOS in the emergency department, and reduce OCS drug costs for acute wheeze attendances in a UK PED, while not adversely affecting admissions, re-attendance, or mortality rates.

Methods The study team reviewed the evidence and implemented a departmental wheeze protocol. OCS type and dose was modified in subsequent years. Standard dosing in 2016 was a 3 day course of prednisolone 1–2mg/kg. This was changed to a single dose of dexamethasone 600 mcg/kg in 2017, then revised again to a single dose Dexamethasone 300 mcg/kg in 2018. To assess the scale of improvement, we retrospectively collected data on attendance records for patients 2–14 years with acute wheeze requiring OCS. We collected data on 100 children who attended PED between October and December for each year (2016, 2017 and 2018). We then assessed OCS tolerability, LOS, OCS drug-cost, and admission, re-attendance, and mortality rates.

Results Over a 48-month period, we increased OCS tolerability by 67.2%. There was an 85.8% reduction in OCS drug costs, saving £41,553.14. There was no change in the LOS, admission, re-attendance, and mortality rates.

Conclusions Improved tolerability and substantial cost savings can be achieved by implementing a structured acute paediatric wheeze protocol and modifying the OCS to single-dose dexamethasone (300 mcg/kg).

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587

INFANTILE BERIBERI AS A CAUSE OF ACUTE INFANTILE ENCEPHALOPATHY IN A REFERRAL HOSPITAL IN SOUTHERN BHUTAN

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Background Thiamine deficiency may lead to acute encephalopathy (infantile beriberi/infantile Wernicke's encephalopathy) and resembles infections like meningitis and acute encephalitis syndrome (AES)/meningoencephalitis. Infants with acute encephalopathy admitted to the Pediatric Department of Central Regional Referral Hospital (CRRH) in Gelephu, Bhutan, historically had high mortality (>70%). In August 2018, suspecting thiamine deficiency as a possible cause, a protocol was deployed to administer thiamine to all children with acute encephalopathy.

Objectives We aimed to describe the clinical presentation of children admitted with acute encephalopathy from January 2015–December 2020, comparing morbidity and mortality outcome before and after administration of thiamine.

Methods We retrospectively collected record-based data from children 1–59 months, admitted with acute encephalopathy between January 2015–December 2020, including clinical presentation, laboratory results and investigations such as cerebrospinal fluid analysis and neuroimaging. We excluded children with infectious meningitis, chronic neurodegenerative disorders and traumatic brain injury. Data was analyzed to assess changes in morbidity and mortality outcome before (Group A: January 1st 2015–July 31st 2018) and after (Group B: August 1st 2018–December 31st 2020) the thiamine administration protocol.

Results In the 6 year period, 153 children (40.5% female) presented with acute encephalopathy with a median age of 3 months (IQR 1.5 to 4), and 88.2% below 6 months. Almost all (99.3%) were born at term, and majority (88.9%) were exclusively breastfed. There were no significant differences between children who did not receive thiamine (65; 42.5%) and those who received thiamine (88; 57.5%) with respect to age, gender, gestational age at birth. The most common presentation was irritability followed by seizures and reduced sensorium.

Overall, 59 children died (38.6%), most of whom had not received thiamine (Group A mortality rate 81.5%, Group B mortality rate 6.8%, $p \leq 0.001$). A disproportionate number of deaths were noted in infants below 6 months of age (81.4%). Respiratory failure was the most common morbidity followed by shock, and acute kidney injury. There was a significantly lower incidence of respiratory failure ($p \leq 0.001$) and shock ($p = 0.003$) in children who received thiamine.

Conclusions In children admitted with acute encephalopathy, administration of thiamine appeared to significantly reduce mortality and morbidity. Prospective studies of children presenting with acute encephalopathy, including measurement of thiamine levels, may validate our preliminary findings suggestive of acute infantile beriberi.