MIND THE GAP! ELEVATED ANIONS SECONDARY TO PARACETAMOL AND SEPSIS

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Methods We illustrate the case of a 15 month old girl who presented with an 11 day history of diarrhoea and vomiting. She presented to the emergency department in a state of decreased consciousness. She was found to be hypotensive, hypoglycaemic and have a profound metabolic acidosis. She required mechanical ventilation and fluid resuscitation. Despite these interventions, she continued to have a profound metabolic acidosis with a very high anion gap (30.5). The levels of lactate and ketones were insufficient to explain the clinical picture.

Results Metabolic investigations for the child were instigated. Whilst a majority of these were normal, examination of the patient’s organic acid profile revealed large peaks of pyroglutamic acid (5-oxoprolinuria) and paracetamol. Termination of paracetamol use, administration of N-acetylcysteine to replenish the glutathione stores and haemofiltration caused resolution of the acidosis. Subsequent testing of the infants urine revealed no further evidence of pyroglutamate.

Conclusions Pyroglutamic aciduria (5-oxoprolinuria) is usually reported in children in the context of inherited errors of metabolism. The transient form that we describe here, whilst reported in the adult population, has rarely been described in children. Various pharmaceutical interventions, most commonly paracetamol, in combination with severe sepsis have been linked with this transient phenomenon. When the lactate and ketone levels don’t correlate with the anion gap, it is important to pursue further diagnostic testing as illustrated by this case. In addition, scrutiny of the child’s medication may give a clue to the diagnosis.

A QUALITY IMPROVEMENT (QI) PROJECT TO INCREASE THE NUMBER OF VENTILATED DAYS BETWEEN UNPLANNED EXUBTATIONS WITHIN PAEDIATRIC INTENSIVE CARE – USING REAL TIME STATISTICAL MONITORING

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Aims Unplanned extubation is an important quality issue. Quality surveillance showed that we were not achieving national targets for the number of ventilated days between unplanned extubations. A QI project was launched with the primary aim of increasing the number of ventilated days between unplanned extubations.

QI literature directed at unplanned extubations have used statistical methodology that detects significance at the end of a fixed time period. This does not allow continuous quality monitoring. “G type” charts are a type of statistical quality control chart that exhibit improved sensitivity over conventional statistical approaches when dealing with rare events.

Methods A Root cause analysis showed us that most unplanned extubations were secondary to the endotracheal tube (ETT) slipping through loose tapes in lightly sedated patients. A series of interventions (Table 1) were implemented. Following intervention implementation we performed continuous monitoring using a “g-type” chart (Figure 1).

Abstract G384(P) Table 1

<table>
<thead>
<tr>
<th>Intervention</th>
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<tr>
<td>ETT fixation</td>
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<tr>
<td>Sedation/Feeding</td>
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<tr>
<td>Training</td>
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Results The mean number of ventilated days between unplanned extubations increased from 1 per 40.8 days to 1 per 250 days. G-chart 1 clearly illustrates that the mean number of ventilated days between unplanned extubations increased from 1 per 40.8 days to 1 per 250 days.