Role of Diazoxide Therapy in Small for Gestational Age Infants with Prolonged Hyperinsulinemic Hypoglycemia

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Background
Small-for-gestational-age (SGA) infants are at-risk of hyperinsulinemic hypoglycemia (HH), requiring high glucose infusion rates (GIR) to maintain euglycemia.

Objectives
To compare the outcomes of SGA infants treated with diazoxide (DZX) versus watchful waiting (WW) with high GIR and feeds in the management of HH.

Methods
This observational study was conducted from September 2014 to September 2020. SGA infants with HH (GIR >10 mg/kg/min, plasma glucose level < 3.0 mmol/l with detectable insulin) were identified. Data on sex, gestational age (GA), birth weight (BW), age at presentation, symptoms, critical investigations, GIR, dose and duration of DZX treatment, and outcomes were analyzed.

Results
56 SGA infants were identified – 27 DZX and 29 WW, male infants being 56% and 62% respectively. Mean GA were 36.4(31–40) for DZX and 36(30–39) weeks for WW. BW were 1942±356 vs 1873±498 gm respectively. 96.4% of infants presented on day 1 of life. More DZX treated infants had symptomatic HH (DZX, 22% vs WW, 7%; p=0.227). Paired glucose/insulin levels were 2.37±0.47 mmol/L/16.39 ±27.4 μU/L in DZX and 2.45±0.65 mmol/L/8.65±11.3 μU/L in WW cohort (p=0.196). Maximum GIR in DZX cohort was 14.8±4.3 vs 13.1±3.2 mg/kg/min in WW (p=0.097). Mean day of DZX initiation was 12.9±8.2 days with an average treatment duration of 65 days and the maximum dose was 4.6±2.2 mg/kg/day. Duration of central venous line, day of resolution, and day to discharge were not statistically different between the two cohorts. However, infants who had DZX initiation <10d vs >10d of life had earlier resolution of HH (p=0.013).

Conclusions
Spontaneous resolution does occur in SGA infants with high GIR and feeds. DZX being a KATP channel agonist, its use should be restricted to symptomatic infants requiring persistently high GIR, especially in early days of life, as the DZX related long-term outcome is unclear. Duration of intensive care treatment for HH was not statistically different between the two cohorts.

The Impact of Coronavirus on Safeguarding Referrals to a Tertiary UK Hospital

Fiona Payne, Fiona Payne. UK

Background
Have coronavirus restrictions resulted in missed child protection concerns.

Objectives
To evaluate the:
1. impact of coronavirus, and the public health measures taken to address it, on child protection referrals.
2. effect on child protection referrals following the re-opening of educational services.

Methods
A retrospective review of patient notes was carried out for all safeguarding medicals to a tertiary dedicated UK children’s hospital between:

- April and June 2020 (peak lockdown)
- April and June 2019
- September to November 2020 (as schools and childcare settings re-opened to all children)

Data was entered into an Excel spreadsheet and quantitative analysis undertaken.

Results
- The total numbers of safeguarding referrals were similar across all 3 time periods.
- Physical abuse was the most common category for referral throughout. There was a higher proportion of neglect in both 2020 data sets compared to 2019.
- Children were previously known to social care at the time of their referral in 38% of cases in 2019 compared to 60% of cases in both 2020 data sets.
- Most children were managed as outpatients: 84% in April–June 2019, 76% in April–June 2020 and 92% of September–November 2020.
- In April–June 2020 20% children required ongoing medical care or intensive care in comparison to 10% of cases in 2019.
- Abuse was confirmed or suspected in 54–55% of cases across all 3 time periods.

Conclusions
Concerns about children not being referred for safeguarding medicals are not supported from this data. In contrast, other UK centres have reported their referrals dropped by a third. [i] [ii]

During the lockdown period more children required hospitalisation including to intensive care compared to 2019, reflecting more significant injury.

The 2020 data sets had a higher proportion of neglect cases, potentially reflecting the increased pressure coronavirus had put on already vulnerable families.[iii]

During lockdown educational settings identified safeguarding concerns in only 6% of cases, potentially explained by extensive educational closures. 15% of referrals in September–November 2020 data were identified by education, not supporting the concern of a spike in referrals as schools re-open. This has been found elsewhere also. [iv]

Abstract 152 Table 1

<table>
<thead>
<tr>
<th>Time period</th>
<th>Total referrals</th>
<th>Physical</th>
<th>Neglect</th>
<th>Emotional</th>
<th>CSA</th>
<th>Forensic</th>
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<tbody>
<tr>
<td>2019</td>
<td>90</td>
<td>51%</td>
<td>7%</td>
<td>0</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>April – June</td>
<td>2020</td>
<td>90</td>
<td>49%</td>
<td>14%</td>
<td>0</td>
<td>25%</td>
</tr>
<tr>
<td>April – June</td>
<td>2020</td>
<td>89</td>
<td>51%</td>
<td>18%</td>
<td>2%</td>
<td>18%</td>
</tr>
<tr>
<td>Sept- Nov</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11%</td>
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</tbody>
</table>

Abstract 152 Table 2

<table>
<thead>
<tr>
<th>Time period</th>
<th>Social care</th>
<th>Police</th>
<th>Hospital staff</th>
<th>School</th>
<th>GP</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>2019</td>
<td>14%</td>
<td>28%</td>
<td>20%</td>
<td>27%</td>
<td>8%</td>
<td>3%</td>
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<tr>
<td>April – June</td>
<td>2020</td>
<td>35%</td>
<td>23%</td>
<td>24%</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Sept- Nov</td>
<td>2020</td>
<td>50%</td>
<td>16%</td>
<td>13%</td>
<td>15%</td>
<td>6%</td>
</tr>
</tbody>
</table>

[i] During the lockdown period more children required hospitalisation including to intensive care compared to 2019, reflecting more significant injury.
[ii] The 2020 data sets had a higher proportion of neglect cases, potentially reflecting the increased pressure coronavirus had put on already vulnerable families.
[iii] During lockdown educational settings identified safeguarding concerns in only 6% of cases, potentially explained by extensive educational closures. 15% of referrals in September–November 2020 data were identified by education, not supporting the concern of a spike in referrals as schools re-open.
[iv] This has been found elsewhere also.
REFERENCES

1. Bhopal S, et al. Who has been missed? Dramatic decrease in numbers of children seen for child protection assessments during the pandemic. Archives of Disease in Childhood Published Online First: 18 June 2020. doi: 10.1136/archdischild-2020-319783

Background

Varicella infection is very common in children and easily transmitted. In immunocompetent, varicella infection is usually mild and self-limiting. However, in immunocompromised, varicella infection has the potential to disseminate and cause complications, one of which is pneumonia, due to impaired cellular immunity that the morbidity and mortality is much higher. Acyclovir is an antiviral that is effective for varicella in immunocompromised children.

Objectives Evaluate evidence exists to date regarding the efficacy and safety of acyclovir in reducing morbidity (disease severity, duration of illness and dissemination) and mortality of immunocompromised children with varicella.

Methods Literature searching was conducted on PubMed, Cochrane and MEDLINE with the keywords of 'acyclovir', 'varicella', 'immunocompromised' and 'children'. After filtering articles based on inclusion and exclusion criteria without time limitation, we found 3 relevant articles. One was excluded since it didn't apply blinding and thus result to the final 2 randomized clinical trials that were critically appraised based on the validity, importance and applicability criteria of Oxford Center for Evidence-Based Medicine (2011).

Results In terms of efficacy, 12 (48%) out of 25 placebo recipients were withdrawn from the double-blind randomized treatment to be treated by open intravenous acyclovir due to their worsening condition, only 1 out of 25 (4%) who were treated by intravenous acyclovir and only 2 out of 25 (8%) who were treated by oral acyclovir were similarly withdrawn (p<0.001). Consequently, intravenous and oral acyclovir both significantly reduce varicella dissemination and mortality. The use of intravenous acyclovir also significantly accelerates crusts formation (p<0.001), reduces the duration of varicella infection. In terms of safety, there were increase in blood urea nitrogen levels without any clinical manifestation and acute diarrhea without dehydration which was mild and self-limiting.

Conclusions All immunocompromised children who develop varicella should be considered for early treatment with either intravenous or oral acyclovir since both are safe and significantly prevent worsening condition of the patient due to varicella dissemination. Intravenous acyclovir also reduces the duration of infection. All patients need to be monitored closely by the physician, especially the one who receives oral therapy, that any whose condition does not show improvement should be considered for intravenous route.

10.1136/bmjpo-2021-RCPCH.87

Background Constipation is common in childhood with UK prevalence ranging between 5–30%. Consequently, inpatient data statistics showed that 79% of children with constipation are admitted through emergency admission. Functional constipation is a clinical diagnosis using history and clinical examination. The national institute for health and care excellence (NICE) and our local trust guidelines clearly state that abdominal x-rays (AXR) should not be used in the diagnosis of constipation unless by specialist services.

Objectives To assess the number of children with constipation presenting to the Paediatric Emergency department (PED) who had Abdominal X-ray (AXR) against recommended guidelines, time spent by these patients in paediatric emergency department, patient flow, the cost of having the AXR and the amount of radiation exposure.

Methods A retrospective review of electronic notes of patients under the age of 16 who had a diagnosis of constipation was conducted over a 3 month period from 1 September 2019 to 30 November 2019.

Results 67 cases were identified. 28% (19) of the 67 children had AXR. Only 1 of the 19 patients who had imaging was admitted. The rest were discharged with no change in management. The average time spent in the Emergency Department for those who had AXR was 3.92 hours compared to 2.62 hours (P Value 0.008) in children who had no imaging. The estimated avoidable cost for the AXR was £2000 over a 3 month period (£100/AXR) with a total avoidable radiation of 0.03–0.11 mSV/AXR.

Conclusions Abdominal X-rays are still performed in children presenting to our PED with constipation despite our guideline recommendations against doing so. Performing X-rays in these children led to longer time spent in the department, increased cost and unnecessary radiation exposure without influencing change in management plan or need for admission. We recommend adhering to the national and local guidelines and avoid AXR where necessary.

10.1136/bmjpo-2021-RCPCH.88

Background Menkes disease is an X-linked progressive neurodegenerative disorder caused by abnormalities of the ATP7a transporter that result in abnormal copper transportation in the mammalian nervous system. Menkes disease results in neurological symptoms and connective tissue abnormalities.