The not so sweet truth of paediatric hypoglycaemia

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Results

- £5934.95 spent on investigations
- £1524.79 spent unnecessarily
- Est. £2000 spent on planned admission

49 patients; 35/49 neonates, 14/49 children, 5/49 planned admissions, 44/49 emergency.

- 42 cases of proven hypoglycaemia
- 23 patients had investigations sent
- Only 2/23 ‘Hyposcreens’ were complete

5 patients were admitted for a planned fast. 3 remained normoglycaemic but all 5 patients were investigated. None of these planned ‘hyposcreens’ were complete.

A ‘Hyposcreen’ was required where there was no identifiable cause for the hypoglycaemia.

- Frequency of investigations performed in 23 patients
- 10 patients had abnormal results;
  - 9 abnormal intermediary metabolites
  - 8 low cortisol
  - 4 high insulin

- Diagnoses;
  - Ketotic hypoglycaemia
  - Pituitary aplasia
  - Transient hyperinsulinism

Discussion

- Hypo packs’ have been introduced to improve complete investigation.
- Concerning that 3 patients had no investigations despite cause being unknown.
- Recent new guidelines on when to investigate from the Paediatric Endocrine Society should improve targeting of resources.
- Guidance currently unclear about result interpretation and thresholds of normality.

Conclusion

- Investigations into hypoglycaemia are generally incomplete (91%) or inappropriate (21%).
- Only 40% of patients required investigation to establish a cause.
- We need to consider more stringent recommendations and dissemination of these to avoid inappropriate investigations and delay in diagnosis.

Key Points

- Need to carefully consider who and why we are investigating for hypoglycaemia
- Investigations should be as complete as possible at the time of hypoglycaemia
- New guidance from Paediatric Endocrine Society released August 2015
- Consideration should be given to both financial and patient safety costs when deciding who to investigate

Tests constituting a ‘Hyposcreen’ and cost

<table>
<thead>
<tr>
<th>Intermediary metabolites</th>
<th>£65.24</th>
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<tbody>
<tr>
<td>Lactate</td>
<td>£2.56</td>
</tr>
<tr>
<td>Cortisol</td>
<td>£5.47</td>
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<tr>
<td>Insulin</td>
<td>£139.77</td>
</tr>
<tr>
<td>Growth hormone</td>
<td>£33.06</td>
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<tr>
<td>Plasma amino acids</td>
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<tr>
<td>Acylcarnitine</td>
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<tr>
<td>Ammonia</td>
<td>£10.22</td>
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<td>Urine ketones, aminoacids</td>
<td>£75.21</td>
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<tr>
<td>Organic acids, sugar TLC</td>
<td>£39.36</td>
</tr>
<tr>
<td>+/- urine toxicology</td>
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</tbody>
</table>

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