Guidelines for Acute Unexpected Hypoglycaemia in Children

**Diagnosis**
If there is clinical suspicion or a capillary blood sugar (stick test) <2.6 mmol/l then the following samples should be taken:

1. **Blood**
   - 2ml fluoride (Grey top)
   - 8ml Li heparin (4ml in small infants) (Orange top)
   - 5ml plain (Gold top)
   - Extra Li heparin and plain if possible.

2. **Blood**
   - 2ml plain (Gold top) after 30 minutes.

3. **Urine**
   - 1-10 ml passed after hypoglycaemia and put in the freezer
   - Ward dipstick for ketones

- Samples should be taken **whilst child is hypoglycaemic**, prior to correction
- Initially samples should be stored only; and only if hypoglycaemia is proven on a lab glucose should the following tests be ordered (in order of importance)

<table>
<thead>
<tr>
<th>Test (blood)</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Glucose</td>
<td>2ml fluoride</td>
</tr>
<tr>
<td>2 Lactate, β-hydroxybutyrate, FFA</td>
<td>1-2ml Li Hep to laboratory within 30 minutes on ice</td>
</tr>
<tr>
<td>3 Cortisol, HGH</td>
<td>2ml plain</td>
</tr>
<tr>
<td>4 Insulin, C peptide</td>
<td>2ml plain</td>
</tr>
<tr>
<td>5 U &amp; E's. bicarbonate, LFT's</td>
<td>1ml Li Hep</td>
</tr>
<tr>
<td>6 Ammonia</td>
<td>1 ml Li Hep to laboratory immediately on ice</td>
</tr>
<tr>
<td>7 Carnitine, specific Acyl Carnitines</td>
<td>1ml Li Hep + Blood spot screening card</td>
</tr>
<tr>
<td>8 Amino acids</td>
<td>1ml Li Hep</td>
</tr>
<tr>
<td>9 Uric acid, triglycerides, cholesterol</td>
<td>3-4ml plain (2nd line)</td>
</tr>
</tbody>
</table>

**Additional blood sample to be taken 30 minutes after hypoglycaemic episode**
**URINE**

| 10 | Organic acids, carnitine, amino acids | Toxicology screen | Plain Universal White top |

**Treatment**

1. Initially give 2ml/kg (or 2.5 mls/kg in neonates) of 10% dextrose as bolus.
2. Start IV infusion of 10% dextrose to run at maintenance requirement.
3. Recheck capillary blood sugar (initially after 5 minutes) and repeat bolus if <4.0 mmol/l.
4. If persistent hypoglycaemia contact Consultant for further advice. Glucocorticoids and glucagons may need to be given

1 - 8, 10 = acute investigations
9 can await discussion with Consultant.

**Reference**

*Dr. Assunta Albanese, St. George’s Hospital, October 2002.*

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