Waikato District Health Board	Ref No: 1721	Version: 3	**Procedure**

Title: Hypoglycaemia evaluation - neonatal

Manual Classification:	Effective Date:	Expiry Date:	Keywords: *(supply 5 keywords - search engine)*
Service specific NICU – Medical	18 May 2015	18 May 2018	Hypoglycaemia Evaluation

Facilitator sign/date	*Process Authorised sign/date*
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1. Purpose of procedure:

To outline the process for investigations of infant with repeated documented episodes of hypoglycaemia, i.e.<2.6 mmol/L.

3. Investigations:

1. Examination – To exclude SGA, dysmorphism, IDM, rhesus incompatibility. Hepatomegaly, if present, might suggest enzymatic defect.

2. Check urine for ketones (store urine for organic and amino acids for later analysis).

3. Take blood for:
   - Serum Insulin (pmol/L) (0.6 ml, plain tube)
   - Cortisol (nmol/L) (0.6 ml, plain tube)
   - β-OH butyrate (µmol/L) (0.4 ml, heparin tube)

   - Lactate (mmol/L) (0.5 ml in fluoride oxalate tube, on ice)
   - Growth Hormone (ng/ml) (0.6 ml, plain tube)
   - TSH, fT_4 (0.6 ml, plain tube)
   - Guthrie Card (Carnitine profile)
   - Ammonia (µmol/L) (1 ml EDTA on ice – ring laboratory before taking sample)

4. Proceed to glucagon stimulation test:
   - 30 ug/kg slow IV or IM

   - Blood for glucose and lactate at 15 min post glucagon.
     (↑ glucose if glycogen stores present. No change in glucose with ↑ lactate type 1 GSD)

5. If hypoglycaemia persists after glucagon test → Rx 2-4 ml/kg IV 10% dextrose.

6. If urine ketones positive:
   - Check ABG
   - Check urine for organic and amino acids (see above)

7. Subsequent hypoglycaemic episodes – take blood for serum insulin and glucose levels, and ammonia (if initial plasma ammonia >50µmol/L).

8. A fast of up to 6 hours may be required to obtain BSL <2.6mmol/L.