

# Management of neonatal hypoglycaemia (baby symptomatic or BGL < 1.5 mmol/L)

Initial management of hypoglycaemia in newborn baby—symptomatic or BGL < 1.5 mmol/L (first 48 hours of life)

Confirm any BGL < 2.6 mmol/L in blood gas machine, PoC analyser or laboratory

- Do not delay treatment
- Urgent medical review/consider neonatologist consultation
- Confirm BGL in blood gas machine, PoC analyser or laboratory
- Admit to neonatal unit—contact RSQ as required
- If indicated collect diagnostic samples for hypoglycaemia screen

### Urgent treatment

- Give glucagon—200 microgram/kg IV
  - If IV access delayed (>10 minutes) give IM or subcut
- Give glucose 10%—1–2 mL/kg bolus IV, then repeat BGL after 30 minutes and if required, further 1 mL/kg bolus IV and monitor for rebound hypoglycaemia
- Commence glucose 10% at 60 mL/kg/day via IV infusion to give glucose at 4.2 mg/kg/min

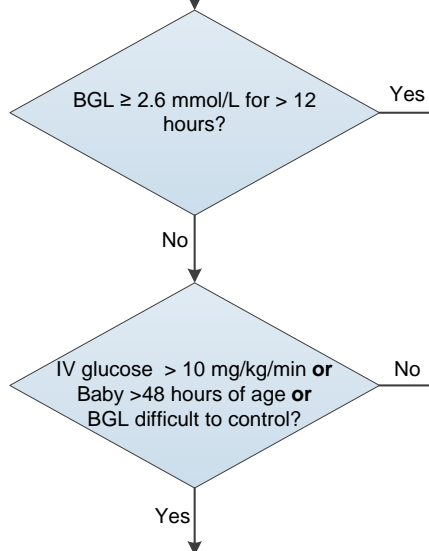
### As required

- Increase IV glucose rate in 20 mL/kg/day increments (e.g. 60 to 80 mL/kg/day)
  - Risk of fluid overload—100 mL/kg/day maximum on day 1 of life (monitor serum sodium levels)
- Increase IV glucose concentration to 12% or step-wise to higher concentration
  - If > 12% glucose administer by UVC/CVL
- If GIR > 8 mg/kg/min in 1st 24 hours or baby hyponatraemic consider glucagon infusion
- BGL
  - Repeat 30 minutes after:
    - Commencing or any changes to glucose concentration
    - Medication administration (for hypoglycaemia)
  - Repeat hourly until  $\geq 3$  mmol/L then, 4–6 hourly
- Feeds—continue if not contraindicated

	Glucose mg/kg/minute			
	mL/kg/day			
%	60	80	100	120
10%	4.2	5.6	6.9	8.3
12%	5	6.7	8.3	10
14%	5.8	7.8	9.7	11.7
16%	6.7	8.9	11.1	13.3
18%	7.5	10	12.5	15
20%	8.3	11	13.9	16.7

### Diagnostic samples

Blood—during hypoglycaemic episode	
Blood gas—including electrolytes, glucose, haemoglobin, haematocrit and lactate	
Priority 1	Insulin Cortisol Acyl-carnitine profile
Priority 2	Growth hormone
Priority 3	Plasma amino acids Ammonium Pyruvate Beta hydroxybutyrate
Urine—post-hypoglycaemic episode	
Metabolic screen	



- Gradually reduce IV therapy while full enteral feeds being established
- When baby is on full oral feeds wean glucagon (if used) and then hydrocortisone (if used)
- Check BGL before feeds
- Discontinue monitoring:
  - When IV glucose and glucagon, and hydrocortisone (if used) ceased **and**
  - Prior to 3 consecutive feeds BGL is  $\geq 2.6$  mmol/L in 1st 48 hours or  $\geq 3.3$  mmol/L after 48 hours

### Discharge and follow-up

- As per underlying cause
- May require long-term follow-up
- If baby has known or suspected hypoglycaemic disorder continue BGL monitoring until 6 hour fast test completed

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**BGL** blood glucose level, **CVL** central venous line, **GIR** glucose infusion rate, **IM** intramuscular, **IV** intravenous, **NNP** neonatal nurse practitioner, **PoC** point of care, **RSQ** Retrieval Services Queensland, **subcut** subcutaneous, **UVC** umbilical venous catheter, **>** greater than, **<** less than, **≥** greater than or equal to

Queensland Clinical Guideline. Hypoglycaemia—newborn Flowchart: F19.8-3-V6-R24