

Management of BGL less than 1.5 mmol/L or baby symptomatic

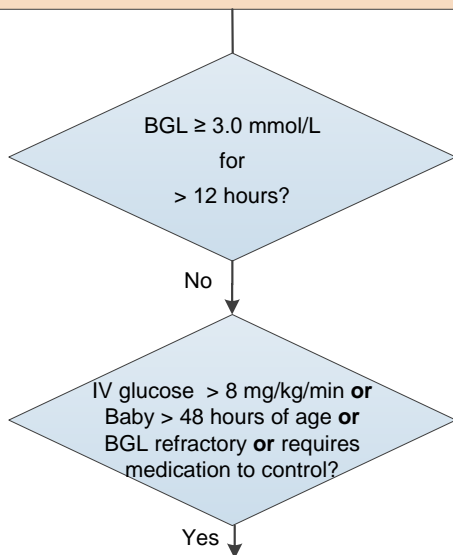
Initial management of hypoglycaemia in newborn baby—symptomatic or BGL < 1.5 mmol/L (first 48 hours of life)

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
 - Collect diagnostic samples for hypoglycaemia screen
- Urgent treatment**
- Commence 10% glucose infusion at 60 mL/kg/day
 - If symptomatic or BGL not improving commence at 80 mL/kg/day
 - Give 10% glucose 1–2 mL/kg IV bolus
 - Consider glucose gel 40% and breastfeed
 - Recheck BGL after 30 minutes
 - If BGL improving continue 10% glucose IV adjust as needed
 - If symptomatic or BGL not improving
 - Give glucagon IV
 - Repeat BGL after 30 minutes and if required, repeat glucose bolus and glucagon
 - If IV access delayed > 15 minutes give glucagon IM or subcut
- 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 give 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 ≥ 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 ≥ 2.6 mmol/L in 1st 48 hours or ≥ 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

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, \geq greater than or equal to

