Glucose 40%
Newborn use only

2024

Alert	40% glucose, on average, raises blood glucose by 0.4 mmol/L (95% CI −0.14–0.94)[2] and should not be used alone in the treatment of moderate to severe hypoglycaemia. This can be a nurse-initiated medication according to the local hospital guideline. DO NOT squirt gel directly into the baby's mouth. as this can cause choking
Indication	Prevention and treatment of mild hypoglycaemia in neonates **≥35 weeks' gestation and <48 hours of life**[1,2]
Action	Glucose, a simple carbohydrate, in a concentrated aqueous gel solution can be administered by direct application to mucosal surfaces of the mouth, including buccal and lingual surfaces. Absorption from these sites may allow rapid access to the circulation. Some proportion of the dose may be swallowed and absorbed from the gastrointestinal tract.[2]
Drug type	Glucose 40%.
Trade name	SugarBabies Gel (Biomed, New Zealand) 40% glucose in Water for Injection (Baxter compounded solution. Product ID GLR.082) Other preparations (e.g. Glutose15 Oral Glucose Gel)– Refer to special comments section.
Presentation	**SugarBabies Gel -ORAL Dextrose 40% Gel syringe (Biomed, New Zealand):** Each 2.5 mL syringe contains Glucose (1 g), citric acid monohydrate, carmellose sodium, water. (TGA Listing 354150) **40% glucose in Water for Injection**: Supplied in 2 mL oral syringe by Baxter (glucose syringe product GLR.082).
Dose	0.5 mL/kg/dose (200 mg/kg/dose).[3] Doses can be repeated as per the local hospital guidelines. 1 mL/kg/dose (400 mg/kg/dose) as a single dose has also been used.[5]
Dose adjustment	Not applicable.
Maximum dose	Not more than 1.5 mL/kg. If no response, alternate measures to treat hypoglycaemia should be instituted.
Route	ORAL
Preparation	
Administration	This can be a nurse-initiated medication according to the local hospital guideline. **<u>Dextrose 40% Gel:</u>** 1. Wearing a clean glove, gently dry the infant's buccal mucosa with gauze. NOTE: If using tube, draw up required dose of gel slowly in an oral-only 5 mL syringe. 2. Dispense one-half of the dose from oral syringe onto gloved finger. 3. Massage into the buccal mucosa of one cheek. **DO NOT SQUIRT DIRECTLY INTO BABY'S MOUTH.** 4. Repeat with remaining half-dose inside the other cheek. 5. Large doses may be divided into 4 equal amounts and given alternating between cheeks. 6. Commence breastfeeding or administer expressed breast milk or formula. 7. Discard the unused portion of the gel. **<u>Glucose 40% solution (Baxter)</u>** 1. Wearing a clean glove, gently dry the infant's buccal mucosa with gauze. 2. Instil the prescribed dose slowly into the side of the mouth onto the buccal mucosa and massage it in with a gloved finger.[6] **DO NOT SQUIRT DIRECTLY INTO BABY'S MOUTH.** 3. Commence breastfeeding or administer expressed breast milk or formula. 4. Discard the unused portion.
Monitoring	Measure blood glucose 30 minutes after administration and subsequent management is as per the hospital guideline.
Contraindications	No information.
Precautions	<35 weeks gestation; infants at risk of aspiration or in whom feeds are contraindicated.
Drug interactions	No information.
Adverse reactions	Risk of aspiration if the gel is squirted directly into mouth.
Overdose	No specific recommendation.
Compatibility	No information.
Incompatibility	No information.
Stability	Single use product. Discard unused portion.
Storage	All preparations: Room Temperature <25°C
Special comments	Other preparation available in Australia: Glutose15 Oral Glucose Gel: 15 g of glucose / 37.5 g tube. 200 mg of glucose gel 40% is equivalent to 0.5 mL. Lemon flavoured. Contains citric acid monohydrate, water,

	dextrose, glycerin, methylparaben, potassium sorbate, propylparaben, carboxymethylcellulose, sodium citrate. SugarBabies Gel is the recommended option. Manufacturer does not recommend Glutose15 Gel under 2 years of age.
Evidence	**Prevention of neonatal hypoglycaemia** Hegarty et al, in a systematic review, assessed the effectiveness and safety of oral dextrose gel in preventing hypoglycaemia among newborn infants at risk of hypoglycaemia and in reducing long-term neurodevelopmental impairment. They included one trial comparing oral dextrose gel versus placebo in 416 infants at risk of hypoglycaemia, most of whom were infants of diabetic mothers and were treated on the postnatal ward. Oral dextrose gel prophylaxis (any dose) was associated with reduced risk of hypoglycaemia compared with placebo (risk ratio (RR) 0.76, 95% confidence interval (CI) 0.62 to 0.94). There were no statistically significant differences in the number of adverse events, separation from mother for treatment of hypoglycaemia, exclusive breastfeeding at discharge or breastfeeding at six weeks postpartum. They concluded that oral dextrose gel reduced the risk of neonatal hypoglycaemia in at-risk infants with no statistically significant differences in the number of adverse events or in risk of separation of infant from mother for treatment of hypoglycaemia [LOE 1, GOR A] **Treatment of neonatal hypoglycaemia** Weston et al, in a systematic review, assessed the effectiveness of dextrose gel in correcting hypoglycaemia and in reducing long-term neurodevelopmental impairment in neonates at risk of hypoglycaemia.[2] They included two trials involving 312 infants. They found no significant difference between dextrose gel and placebo gel for major neurosensory disability at two-year follow-up (risk ratio (RR) 6.27, 95% confidence interval (CI) 0.77 to 51.03; one trial, n = 184; quality of evidence very low). Dextrose gel compared with placebo or no gel did not alter the need for intravenous treatment for hypoglycaemia (typical RR 0.78, 95% CI 0.46 to 1.32; two trials, 312 infants; quality of evidence very low). Infants treated with dextrose gel were less likely to be separated from their mothers for treatment of hypoglycaemia (RR 0.54, 95% CI 0.31 to 0.93; one trial, 237 infants; quality of evidence moderate) and were more likely to be exclusively breastfed after discharge (RR 1.10, 95% CI 1.01 to 1.18; one trial, 237 infants; quality of evidence moderate). Treatment of infants with neonatal hypoglycaemia with 40%dextrose gel reduces the incidence of mother-infant separation for treatment and increases the likelihood of full breast feeding after discharge compared with placebo gel. No excess adverse effects have been reported during the neonatal period or at two years' corrected age. Oral dextrose gel has not been compared to supplementary feeding with human milk or formula. Oral dextrose gel may be considered as first-line treatment for infants with neonatal hypoglycaemia. [LOE 1, GOR A]
Practice points	
References	1. Hegarty JE, Harding JE, Crowther CA, Brown J, Alsweiler J. Oral dextrose gel to prevent hypoglycaemia in at-risk neonates. Cochrane Database of Systematic Reviews 2017, Issue 7. Art. No.: CD012152. DOI: 10.1002/14651858.CD012152.pub2. 2. Weston PJ, Harris DL, Battin M, Brown J, Hegarty JE, Harding JE. Oral dextrose gel for the treatment of hypoglycaemia in newborn infants. Cochrane Database of Systematic Reviews 2016, Issue 5. Art. No.: CD011027. DOI: 10.1002/14651858.CD011027.pub2. 3. Harris DL, Weston PJ, Signal M, Chase JG, Harding JE. Dextrose gel for neonatal hypoglycaemia (the Sugar Babies Study): a randomised, double-blind, placebo-controlled trial. Lancet 2013;382(9910):2077–83. 4. Harris D, Alsweiler J, Ansell J, Gamble G, Thompson B, Wouldes T, et al. Outcome at 2 years after dextrose gel treatment for neonatal hypoglycaemia: follow-up of a randomized trial. Journal of Pediatrics 2016;170:54–9. 5. Troughton KEV, Corrigan NP, Tait RME. Hypostop gel in the treatment of neonatal hypoglycaemia: a randomised controlled trial. Archives of Disease in Childhood 2000;82 (Suppl 1):A30.

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