RANDOMISED TRIAL OF DEXTROSE GEL FOR TREATING NEONATAL HYPOGLYCAEMIA: THE SUGAR BABIES STUDY

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Background and aims: Neonatal hypoglycaemia is common and linked to poor neurodevelopmental outcome. There is a paucity of data to guide treatment. We sought to determine whether treatment with 40% dextrose gel is more effective than feeding alone in reversing hypoglycaemia in the first 48 hours after birth.

Methods: Randomised, placebo controlled, double-blinded trial comparing the incidence of treatment failure in babies randomised to receive 40% dextrose gel or placebo gel. Eligible babies were ≥ 35 weeks gestation and at risk for hypoglycaemia. Hypoglycaemic babies (blood glucose < 2.6 mM, glucose oxidase method) were randomised, received gel 0.5 ml (200 mg) / kg massaged into the buccal membrane, and were encouraged to feed. Blood glucose was measured 30 minutes after treatment, and gel was repeated if hypoglycaemia persisted. Primary outcome was treatment failure, defined as blood glucose concentration < 2.6 mM after two doses of gel 30 minutes apart.

Results: 514 babies were enrolled, of whom 242 (47%) were randomised, 122 to dextrose and 120 to placebo gel. The median (range) birth weight was 2870 (1590–5550) g and gestation 37 (35–42) weeks. Babies randomised to dextrose gel were half as likely to meet criteria for treatment failure (14 (11%) vs 28 (23%), $p = 0.01$), and were also less likely to be admitted to Newborn Intensive Care for treatment of hypoglycaemia (15 (12%) vs 26 (22%), $p = 0.05$).

Conclusion: Dextrose gel 200 mg/kg is more effective than feeding alone, and should be considered for first line therapy of hypoglycaemia in late-preterm and term infants.