Report for the Waikato Medical Research Foundation
The Sugar Babies Study
A randomised controlled trial

Hypoglycaemia (low blood sugar level) is the only common preventable cause of brain damage in babies. It is most common in the first twenty-four hours after birth, and is a frequent reason for admission to the Newborn Intensive Care Unit. Admission to the Newborn Intensive Care Unit separates mother and baby, and can interrupt the establishment of breast feeding.

Oral carbohydrate (sugar) is the first line of treatment for hypoglycaemia in older diabetic patients, but there is no widely available and effective oral treatment for newborn babies. Waikato Hospital is the only hospital in Australasia to use oral 40% dextrose (sugar) gel for treatment of hypoglycaemia in babies. However, there is no reliable evidence to support this treatment.

We are very grateful for the funding from Waikato Medical Research Foundation which allowed us to undertake the *Sugar Babies Study*, completed in November 2010. The Sugar Babies study was a randomised controlled trial to determine if 40% dextrose gel massaged into the inside of the cheek improves blood sugar concentration in hypoglycaemic newborn babies.

Babies at risk of developing hypoglycaemia were recruited before or shortly after birth. If a baby developed hypoglycaemia in the first two days after birth, they were randomised to receive either dextrose gel or an identical placebo gel, and encouraged to feed. The trial was designed to assess how successfully the gel treatment reversed the hypoglycemia.

Excitingly, our preliminary data show that babies who received the dextrose gel were twice as likely to show an improvement in their blood sugar concentrations. Furthermore, babies who received the dextrose gel were less likely to be admitted to the Newborn Intensive Care for treatment of hypoglycaemia.

These preliminary data have just been presented at the Perinatal Society of Australia and New Zealand Annual Congress in Hobart, and the prestigious Pediatric Academic Societies meeting in Denver, USA, where they have attracted considerable international interest. The remaining data analyses are currently under way, and we are hoping to submit a manuscript describing these results to a major international journal later in the year. Importantly, we expect that the results from this study will contribute to improving the management of babies with neonatal hypoglycemia in the future.