INTRODUCTION

Oral Glucose Gel: Low Cost, Quick and Effective Management of Neonatal Hypoglycemia

In a continuous endeavor to maintain best practice for neonatal care, increasing and maintaining exclusive breastfeeding rates stays at the forefront of our perinatal department’s agenda. With the intention to lower the rate of separation of mom’s and babies, and positively impact breastfeeding we joined forces. In collaboration with all perinatal areas, lactation, pediatrics, neonatology, information systems and the families we serve, in July 2017 we launched the use of oral glucose gel for treatment of neonatal hypoglycemia. Evidence was presented to all staff (Harris,etal, 2013) (AAP, 2011 ). Following AAP guidelines an algorithm was established, policy and practice were updated and the staff trained one on one. Through two quarters we fine-tuned our data collection, adjusted to the unexpected new glucometers, and managed to drop our rate of admission to NICU with a primary diagnosis of hypoglycemia from 12% to 3% of all hypoglycemic neonates born at our community NICU.

OBJECTIVES

It has been amply demonstrated that exclusive breastfeeding positively impacts the health of both mothers and babies (USDHHS, 2011). In our community hospital, while approximately 400 bedside neonatal blood sugars per month are checked secondary to risk factors for hypoglycemia or demonstrations of symptoms of low blood sugar (AAP, 2013), only about 10 % of those patients are admitted to NICU for hypoglycemia. These newborns are separated from their family negatively impacting their ability to establish exclusive breastfeeding during the newborn inpatient stay. In an effort to keep mothers and babies together and allow optimal opportunities for skin to skin, preservation of the family unit, and unlimited access to breastfeeding, oral Dextrose gel for treatment of neonatal hypoglycemia was implemented.

METHODS AND MATERIALS

A Gap analysis early in the project revealed a general lack of knowledge, absence of dextrose gel in the institution, and a clear ordering method. As the project was adopted by the Pediatric committee and the unit based nurse committees from Couplet Care, the NICU and lactation teams, the need for a strong multifaceted education plan became clear. All stakeholders including the pharmacy and information technology team would be involved. A GANNT chart kept us abreast of our progress, and leaders from every area kept the conversation alive with monthly updates avoiding a surprise practice change for all staff involved.

Major Goals Met. 15 months

1. Buy in from Neonatology
2. Creating a Policy: Many revisions
3. Add 40% Dextrose Gel to formula
   a) Pricing
   b) Stock in medication dispensing machine
   c) Documentation in EHR
   d) Multi-dose tube sampled with every administration
4. New order: added to hypoglycemia order set
   a) Originally not pre-checked
   b) Pre-checked as Physician confidence grew
   c) Originally physician notification with every dose
5. Staff Training:
   a) New algorithm
   b) Pharmacy training
   c) Medication 95% communication by phone with pediatricians
   d) Neonatology: awareness of process and availability of product in nursery
   e) IT: Training all users to utilize the order
   f) Nursing: Gel administration, 1.1 hands on training, blood sugar follow up, and team communication and support

RESULTS

Within 3 fiscal quarters, the rate of admission to NICU for hypoglycemia dropped from 12% to 3%.

The total number of necessary blood sugars for newborn nursery and NICU combined dropped 20%.

CONCLUSIONS & DISCUSSION

The use of oral Dextrose Gel is a viable, cost effective method of treating neonatal hypoglycemia. Within 3 fiscal quarters, the rate of babies with hypoglycemia admitted to NICU dropped from 12% to 3%. However, the target is moving and difficult to stay ahead of. With differing recommendations for “normal blood Sugars”, and the pressing issue of exclusive breastfeeding this algorithm remains a hot topic.

- With the First two patients receiving gel, the second blood sugar remained below 30 mg/dL, thirty minutes after the dextrose gel dose. They were taken to NICU for IV Dextrose, but blood sugar in NICU was >60 g/dL, the baby went back to the mother, and we lengthened the interval between dose and recheck of blood sugar.

- The first ever dose of glucose gel given was on a weekend. It was requested by a pediatrician. The staff were annoyed that it was so hard to obtain - because go live was not until Monday. The pharmacist found it and a dose was given, keeping the baby with the mother. Go Live that Monday, took care of that.

- Originally, Staff needed to notify the pediatrician for an order prior to every dose. This generated too many calls and the algorithm was adjusted.

REFERENCES


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