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Does Administration of Glucose Gel Prevent the Need for Intravenous Glucose in Infants With Hypoglycemia?

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Purpose: Hypoglycemia in the neonatal period is a serious and preventable condition that can lead to lifelong disability (Harris, 2013). Neonatal hypoglycemia affects approximately 5–15% of otherwise healthy babies but is reported to be increasing due to a greater incidence of preterm births and maternal factors (Harris, 2013). Hypoglycemia in late preterm infants is associated with an increased risk of developmental delay, brain injury, and poor neurological outcomes, thus stricter monitoring and timely treatment of hypoglycemia after birth is recommended (Kerstjens, 2012). In late preterm and term infants, initial management of hypoglycemia focuses on feeding, and feeding supplements. If feeding is unsuccessful and glucose concentration remains low, admission to the special care unit for intravenous glucose is usually indicated, separating the mother and baby. This separation can delay the establishment of breastfeeding and interfere with bonding (Harris, 2013). After extensive review of the literature, one hospital developed a new policy for the management of hypoglycemia that included the administration of 40% glucose gel. Nursing leadership at that institution wanted to evaluate if the new policy has led to a decrease need for IV glucose and admission to the special care nursery.

This quality improvement project compares and contrasts the management of hypoglycemia for infants before and following implementation of the new policy. The goal is to determine if administration of glucose gel has reduced the need for intravenous glucose and admission to the special care nursery.

Methods: A retrospective chart review of 120 infants, is being completed for the time frame of October 1, 2016 to September 30, 2017 (6 months prior to, and 6 months after the change in policy). Data will be collected on all infants diagnosed with hypoglycemia that meet the inclusion criteria.

Results: In progress Patient characteristics, blood glucose levels, number of glucose gel treatments, feeding supplementation, special care nursery, and IV glucose will be described using descriptive statistics. Chi square analysis will be performed to determine the association between patient characteristics and the need for intravenous therapy and special care nursery admission. A run chart will be used to demonstrate the need for IV glucose in managing hypoglycemia and determine if there has been a reduction since the change in policy.

Conclusion: This quality improvement project will help determine the efficacy of glucose gel in treatment of hypoglycemia that has important implications for the mother and infant, such as facilitating mother/infant bonding and improved breastfeeding. This work will inform current practice and the national trend of using glucose gel to treat hypoglycemia. More research is needed to help determine which infants are at a greatest risk for hypoglycemia.

Title:

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Keywords:

glucose gel, hypoglycemia and infant

References:

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Abstract Summary:

Hypoglycemia in neonates is a serious yet preventable condition that can lead to lifelong disability. If feeding is unsuccessful admission to the special care unit for intravenous glucose is usually indicated, separating the mother and baby. This quality improvement explores if glucose gel administration prevents the need for IV glucose.

Content Outline:**I. Background and Significance:**

- A. Hypoglycemia in the neonatal period is serious and preventable.
- B. Neonatal hypoglycemia affects approximately 5–15% infants.
- C. Previous Treatment consisted of only IV therapy.
- D. A new policy added the administration of glucose gel.

II. Purpose and Goals:

A. This quality improvement project compares and contrasts the management of hypoglycemia for infants before and following implementation of the new policy.

III. Methodology:

A. A retrospective chart review of 120 infants, is being completed for the time frame of October 1, 2016 to September 30, 2017 (6 months prior to, and 6 months after the change in policy).

IV. Results:

A. Data collection and analysis are in progress.

B. Patient characteristics, blood glucose levels, number of glucose gel treatments, feeding supplementation, special care nursery, and IV glucose will be described using descriptive statistics.

V. Implications for Future:

A. This quality improvement project will help determine the efficacy of glucose gel in treatment of hypoglycemia.

B. This work will inform current practice and the national trend of using glucose gel to treat hypoglycemia.

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Professional Experience: Nancy is currently a student in her last year of her Doctor of Nursing Practice (DNP) program and is currently participating in a newborn quality improvement study. She has worked for over 20 years as a primary care pediatric nurse practitioner with a neonatal focus. Part of her job responsibility is to round in the newborn nursery. She has also worked as a Maternal Child Health Educator for over 25 years in different academic settings and currently works at Northeastern University in Boston, Massachusetts. Nancy is a newborn resuscitation instructor and STABLE instructor. She has conducted research in Neonatal abstinence syndrome. Nancy is an active Gamma Epsilon Sigma Theta Tau International member and is currently a faculty adviser for undergraduate students.

Author Summary: Nancy is a student in her last year of her Doctor of Nursing Practice (DNP) program and is currently participating in a newborn quality improvement study. She has worked for over 20 years as a primary care pediatric nurse practitioner with a neonatal focus. Part of her job responsibility is to round in the newborn nursery. She has also worked as a Maternal Child Health Professor for over 25 years in different academic settings.