Halting Hyperbilirubinemia: Creating a Pathway to Success

Nicole C. Dalessio BSN, RN, CPN  
*Lehigh Valley Health Network, Nicole_C.Dalessio@lvhn.org*

Ashley M. Divincenzo BSN, RN, CPN  
*Lehigh Valley Health Network, Ashley_M.Divincenzo@lvhn.org*

Kendra J. Savage BSN, RN, CPN  
*Lehigh Valley Health Network, Kendra_J.Savage@lvhn.org*

Samantha Steich BSN, RN, CPN  
*Lehigh Valley Health Network, Samantha.Steich@lvhn.org*

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Halting Hyperbilirubinemia: Creating a Pathway to Success
Nicole Dalessio, BSN, RN, CPN, Ashley Divincenzo, BSN, RN, CPN, Kendra Savage, BSN, RN, CPN and Samantha Steich, BSN, RN, CPN
Pediatric Unit
Lehigh Valley Health Network, Allentown, Pa.

PURPOSE/LEARNING OBJECTIVES
Share pragmatic tactics designed to reduce the incidence of severe hyperbilirubinemia in the neonatal period.

BACKGROUND/EVIDENCE

• Hyperbilirubinemia is a common cause of hospital admission in neonates.
• Severe hyperbilirubinemia can lead to acute bilirubin encephalopathy and kernicterus – a form of irreversible neurological damage.
• American Association of Pediatrics (AAP) guidelines (2004) recommend:
  • Before discharge, every newborn should be assessed for the risk of developing severe hyperbilirubinemia.
  • Protocols for assessing this risk should be in place.
• Infants readmitted for hyperbilirubinemia should have a total serum bilirubin (TSB) level ≤ 14 mg/dL in order to discontinue phototherapy and be considered for outpatient management (AAP, 2004).
• At an academic, 1,200 bed Magnet® facility inpatient pediatric unit, no standardized approach existed to assess and treat hyperbilirubinemia.
• Pre-intervention data (Oct.–Dec., 2017):
  • Mean length of stay (LOS) for infants undergoing triple phototherapy was 27 hours
  • Percentage of infants with a TSB level ≤14 (a discharge criteria) pre-pathway was 53%

METHODS/INTERVENTIONS

STRATEGY
• July, 2017: Planning meetings with inter-professional decision making groups (Children's Hospital of Philadelphia, LVHN, Children's Hospital of New York, and the Children's Hospital of Illinois) were held to review the clinical processes by developing a care pathway for the infant at risk of severe hyperbilirubinemia
• Aug., 2017: Clinical pathway for hyperbilirubinemia was presented to the CPOC

CREATE
  • Development of an electronic health record (EHR) order set
  • Written clinical practice guideline
  • Development of a pathway implementation plan

IMPLEMENT
  • Developed a plan for data collection
  • Pre-education sessions on electronic charting and study
  • Consultation with Pathology Institute to discuss the care of infants with hyperbilirubinemia
  • Pathway integration with Family Medicine and interdisciplinary teams

RESULTS

OUTCOME MEASURES:
• Decreased LOS in the neonate admitted with hyperbilirubinemia
• Increased percent of infants with TSB ≤14 on day discharge

LENGTH OF STAY INFANTS ADMITTED TO THE PEDICATRIC UNIT WITH HYPERBILIRUBINEMIA

TOTAL SERUM BILIRUBIN ≤14 ON DAY OF DISCHARGE INFANTS RECEIVING TRIPLE PHOTOTHERAPY

CHALLENGES/LESSONS LEARNED
• Bilirubin light drapes:
  • Required collaboration with our network products department to attain and stock equipment
  • Pathway integration with Family Medicine and interdisciplinary teams outside of the division was challenging
• Workgroup members met with Family Medicine representatives to brainstorm ways to improve pathway compliance

NEXT STEPS
• Introduce and implement the neonatal hyperbilirubinemia pathway on the Mother/Baby and Neonatal Intensive Care units.

REFERENCES

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