Heparin versus Normal Saline Flush of Central Lines in the Pediatric Population

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Heparin versus Normal Saline Flush of Central Lines in the Pediatric Population

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Background

- Clinical practice guidelines for the prevention of complications associated with implantable ports or external Brovics/Hickmans vary greatly in the pediatric population.
- Institutions such as LVHN use either heparin, NSS, or a combination of both to flush implantable ports or external Brovics/Hickmans including the pediatric population.
- There is debate regarding the cost, quality of line patency and care, and associated incidence of complications of using NSS versus using a heparin flush in implantable ports or external Hickman/Broviac.
- LVHN has moved to only using NSS flushes in adult patients unless otherwise ordered by provider.

PICO Question

- In pediatric patients with implantable ports and external Brovics/Hickman, how does the administration of NSS flushes compared to heparin flushes influence hospital cost and the quality of line patency and care?
  - P – Pediatric patients with implantable ports and external Brovics/Hickman
  - I – Administration of NSS flushes
  - C – Administration of Heparin flushes
  - O – Hospital cost and quality of line patency and care

Evidence

- Research needs to be completed

Methods

- Completed a pediatric-specific literature review.
- Collected data on the Inpatient Pediatric Unit. Implemented a form for nurses caring for patients with implantable ports or external Brovics/Hickman to track how often saline is used compared to how often heparin is used to flush the lines.
- Researched the cost of NSS versus the cost of heparin and how much money is spent on the use of either one with consideration to how often each is used.
- Reviewed central line guidelines shared by other children’s hospitals.

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Results

- Out of 182 total flushes recorded:
  - 178 NSS flushes = $78.32
  - 4 Heparin flushes = $2.00
- Infrequent heparin flush administration. RNs are administering heparin flushes as per provider orders.
- Per lack of Heparin use, comparative costs of NSS and Heparin use is insignificant.
- No reported indicators of occlusion during all 182 flushes.

Limitations:

- RN participation
- High incidence of patients with continuous fluids
- Incomplete data; data collection form changed mid-year to include fluid order data
- PICCs excluded from data collection

Next Steps

- Collaborate with Lehigh Valley Children's Hospital Patient Care Specialists to develop a pediatric-specific central line policy and flush guideline
- Initiate collaboration with pediatric specialty providers to review central line policy and flush guideline once created

References


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