

Recommendation of a Neonatal Intravenous Infiltration Pathway

Lynsie Jones, RN, BSN & Lori Baas Rubarth, PhD, NNP-BC

PURPOSE

- To recommend a neonatal infiltration pathway for bedside nurses to reference in preventing, grading, and initiating treatment of peripheral intravenous infiltrations.

PROBLEM

- Complications of infiltrations include pain, infection, disfigurement, prolonged hospitalization, increased hospital costs, and possible litigation.
- Neonates are at the highest risk for injury due to fragile tissue and skin and smaller more fragile veins.
- Few grading scales adequately account for patient size and most are not generalizable to the neonatal population.
- Many institutions do not have adequate intervention and treatment algorithms for bedside nurses to utilize when responding to an infiltration.

LITERATURE REVIEW

- Prevention is the best method of decreasing morbidity from infiltrations.
- Use of models for rapid identification, appropriate assessment, and timely treatment can further improve outcomes for infiltration and extravasation events.
- The TLC method created by Cincinnati Children's Hospital and Medical Center, encouraged thorough hourly assessment of IV sites.
- The infiltration scale created by Thigpen focuses on the criteria of pain, crying with or difficulty with flushing, redness, capillary refill, swelling, blanching, skin temperature, and pulses.
- Five steps were recommended at the first signs of infiltration: stop fluids, disconnect IV tubing, attempt aspiration from catheter, nursing interventions, and notification of the medical team.
- Application of heat/cold is controversial in this population.

RESULTS

- A final re-evaluation of the infiltration rates and treatment strategies used will be completed prospectively a year after implementation of the new guideline.
- Seven infiltrations in the 12 month period prior to this study required the use of hyaluronidase.
- A decreased number of infiltrations and less requiring use of treatment would be the goal of this project.

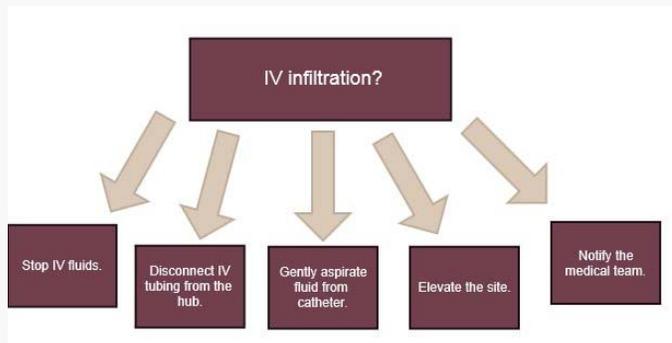


DISCUSSION

- The TLC method was questioned as being developmentally inappropriate for this population.
- Difficulties in implementation delayed data collection within the timeframe of this study.

METHODOLOGY

- A retrospective review of infants in a 34 bed, level IV NICU
- Convenience sample of infants with intravenous infiltrations within the last year.
- Prevention strategies and care pathway were created and presented to staff.
- A final re-evaluation of the infiltration rates and treatment strategies used will be completed prospectively a year after implementation of the new guideline.
- The TLC method- Touch, Look and Compare, the five steps as described by Doellman, and the grading scale by Thigpen would be introduced as a complete pathway for identification, assessment, and treatment of infiltrations.



THIGPEN GRADING SCALE	
Stage 1	Pain at site, crying when cannula flushed, difficulty with flushes, no redness or swelling
Stage 2	Pain at site, redness and slight swelling, brisk capillary refill
Stage 3	Pain at site, moderate swelling, blanching of area, skin cool to touch, brisk capillary refill below site
Stage 4	Pain, severe swelling around site, blanching of area, skin cool to touch, area of skin necrosis or blistering, prolonged capillary refill time (>4 seconds), decreased or absent pulses