Title:
Using Ultrasound Guided PIV Insertion in the Pediatric Population

Shana L. Steege, MBA, MSN, RN, NE-BC
UTMB Health, League City, TX, USA

Jacqueline S. Stout, PhD, RN-BC, CNE
Nursing, UTMB Health, Santa Fe, TX, USA

Carla E. Rider, DNP, MBA, BS, RNC-LRN
Texas Perinatal Services, TETAF, Plano, TX, USA

Session Title:
Maternal-Child Health Nurse Leadership Academy (MCHNLA)

Slot:
MCH: Sunday, 17 November 2019: 11:45 AM-12:15 PM

Applicable Category:
Clinical, Leaders, Researchers

Keywords:
Maternal Child Health, Pediatrics and Ultrasound Guided PIV

References:


**Abstract Summary:**

Intravenous therapy is a frequently used medical intervention. There is evidence that ultrasound guided PIV (USGPIV) placement in children reduces the number of attempts to successful cannulation. This study implemented an USGPIV insertion team to increase compliance with the standard while improving staff and patient satisfaction.

**Content Outline:**

Using Ultrasound Guided PIV Insertion in the Pediatric Population

I. Intro

1. Current evidence supports ultrasound guided PIV placement in adult populations
2. Growing evidence that ultrasound guided IV insertion can be used in pediatric populations

II. Body

1. Purpose
   1. Implement an ultrasound guided IV insertion team in Pediatric Inpatient Units

2. Methods
   1. Pre-implementation data collected over 6 months to see how often ultrasound was used
   2. Patient and Staff Satisfaction with treatment was measured
   3. Treatment group received ultrasound guided PIV insertion after two failed blind attempts

3. Results
   1. 2 staff members where fully trained to ultrasounds guided IV insertion
   2. 6 months of treatment data collection, results pending

III. Conclusion

1. Training was successfully completed for staff
2. Staff continues to work on confidence and success rates
3. Patients had successfully received the ultrasound treatment within the unit

Topic Selection:
Maternal-Child Health Nurse Leadership Academy (MCHNLA) (25199)

Abstract Text:

Introduction/background: Intravenous (IV) therapy using a peripheral IV (PIV) in children is one of the most frequent medical interventions in the hospital. Current evidence supports ultrasound guided PIV placement in the adult patient population as it helps improve successful placement and decrease time to successful cannulation with no more risk than the traditional procedure (Constantino, 2005; Crowley, 2012; Gregg, 2009). There is growing body of evidence available that ultrasound guided PIV placement reduces the number of attempts to place a PIV in children (Benkhadra, 2012; Doniger, 2009; Feinsmith, 2018; Leung, 2015; Viongrad, 2018) and the cannulation lasts longer than traditional insertion (Desai, 2018). This was a study conducted as a fellow participant of the Maternal-Child Health Nurse Leadership of Academy (MCHNLA), sponsored by Sigma and Johnson & Johnson.

Aim/Goal/Purpose: Ultrasound guided IV insertion is current standard of care but is not consistently used at the University of Texas Medical Branch (UTMB). The purpose of this study is to implement an ultrasound guided IV insertion team in the Pediatric Medical/Surgical (Med/Surg) and Pediatric Intensive Care Units (PICU) to increase compliance with the standard of care and to improve staff and patient satisfaction with the treatment in the pediatric inpatient population.
Methods: Data was collected during a 6-month period, June 1, 2018, to November 30, 2018, for all pediatric patients that required a peripheral IV be inserted for treatment on the UTMB pediatric med/surg unit or PICU. Data was obtained from EPIC (electronic medical record) documentation and included the number of IV attempts and whether ultrasound was used to assist insertion. Each parent and staff were asked to fill out an anonymous survey regarding their experience of the treatment. The data obtained from the survey was used to measure an aggregate data pool related to staff, patient and parent satisfaction. Following the implementation of the standard of care (ultrasound guided PIV insertion after two failed blind attempts) data was extracted from EPIC from December 1, 2018, to April 2019, to evaluate the implementation of the treatment.

Results: In October and November 2018, four staff attended training to complete competencies in ultrasound guided PIV insertion. Two staff were fully trained and validated. The other two were not able to attend all required elements of the training and were not able to join the treatment group. December 1, 2018, we implemented the usage of the pediatric team to begin the treatment phase. As of April 1, 2019, we have successfully had 10 patients meet criteria for ultrasound use and the treatment was used. Pre and post treatment data, and survey results are currently pending.

Conclusions: Training was successfully completed to integrate ultrasound guided IV insertion into the standard of care being delivered for pediatric patients at UTMB. The staff continue to work on their confidence and efficiency in insertion, which other centers have found challenging in the first 12 months after implementation (Richard, 2105). UTMB policies have been updated to reflect the need for using ultrasound guided IV insertion in all age patients, outside of the neonatal intensive care unit, once two insertion attempts have failed. Findings from both the number of patients receiving treatment and survey results of this study are currently pending conclusion of the treatment period.

References


