Introduction

Insertion of pediatric IV’s is a procedure that can produce anxiety in patients, families, and healthcare providers. The proper use of procedural pain management in pediatric IV starts can significantly reduce or eliminate the pain associated with the procedure and as a result decrease anxiety related to the procedure and increase family and patient satisfaction. This QI project was implemented to decrease patient pain scores and increase patient and parent satisfaction related to IV starts.

The purpose of this QI study was to evaluate the effectiveness of various IV pain management options in a 16 bed pediatric ER that is part of a larger level 1 trauma center.

Method

• Patients (age 1-18 years) presenting to the Pediatric ER between August 1 and September 30, 2014 were randomly selected for study inclusion.
• Following IV insertion, the patient’s nurse completed a survey (figure 1) regarding pharmacological and nonpharmacological pain management techniques utilized, patient’s pain score, and patient and parent’s satisfaction with the techniques utilized.
  • Pharmacological Interventions: J-Tip Syringe with buffered lidocaine (Image 1), lidocaine cream (LMX) (Image 2), vapocoolant spray (Pain Ease) (Image 3)
  • Nonpharmacological: comfort positioning, distraction (Image 4)
  • 30 nurses also completed an online survey regarding their use of, familiarity with, and belief in the various pain management techniques.
• Upon completion of data collection, all nurses were required to attend a one hour IV Pain Management class led by the unit educator and child life specialist.

Pharmacological Interventions

Needle-free injection device that uses a compressed carbon dioxide gas cartridge to painlessly force lidocaine into the subcutaneous tissue through a micro-orifice.

Cold spray that numbs skin after 4-10 seconds of use.

Lidocaine cream numbs skin after 30 minutes of contact.

Conclusions

The use of pharmacological pain management along with nonpharmacological pain management should be a standard for IV starts with any pediatric patient. The use of these methods not only decreases pain but also increases patient and family satisfaction with the procedure. The use of nonpharmacological options allows the parents to be involved, active participants in their child’s care. All ER’s should offer some form of pharmacological pain management to pediatric patients along with the concurrent use of nonpharmacological pain management such as comfort positioning and distraction.

Results

There was no control group as all patients were offered a pain management option. On a scale of 0-10 either using the FACES, FLACC or numeric scale the average pain level for insertion with Pain Ease was 3.25 and 1.43 with J-Tip. Patient satisfaction on a scale of 0 (not satisfied) and 10 (completely satisfied) was 8.44 for Pain Ease and 8.58 for J-Tip. Parent satisfaction was 8.87 for Pain Ease and 9.61 for J-Tip. The overall average for all IV start pain management methods was a pain level of 2.25, a patient satisfaction of 8.52, and a parent satisfaction of 9.28.