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A comparison of a needle-free injection system for local anesthesia versus EMLA for intravenous catheter insertion in the pediatric patient.

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Abstract

Placement of IV catheters is a painful and stressful procedure for children. J-Tip is a needle-less Food and Drug Administration approved injection system that can be used for delivery of local anesthetic before IV cannulation. In this study, we compared the effectiveness of J-Tip versus eutectic mixture of local anesthetics (EMLA) to facilitate IV cannulation and provide adequate analgesia before IV placement. Children 7-19 years of age (n = 116) were randomized to receive 0.25 mL of 1% buffered lidocaine with J-Tip (n = 57) or 2.5 g of EMLA (n = 59) before IV cannulation. Measurements of success of cannulation (number of attempts for IV placement) and pain (0-10 visual analog scale) at application of local anesthetic and at cannulation were performed. There was a significant (P = 0.0001) difference in pain ratings during IV cannulation between EMLA (median = 3) and the J-Tip (median = 0). Eighty-four percent of patients reported no pain at the time of J-Tip lidocaine application compared to 61% in the EMLA group at the time of dressing removal (P = 0.004). We did not find differences in the number of attempts for IV cannulation. J-Tip application of 1% buffered lidocaine before IV cannulation is not painful and has better anesthetic effectiveness compared with EMLA.

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