Comparison of Bacteriostatic Normal Saline (BNS) and 1% Buffered Lidocaine (Lido) For the Relief of Pain during Intravenous Insertion

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Introduction/Problem: Interventions to reduce pain with peripheral insertion are part of the caring process for nurses. Evidence is inconclusive regarding the use of peripheral intravenous insertion analgesia.

Purpose of the Study: The study compares differences in the pain level experienced during IV insertion with BNS or Lido used as intradermal pre-analgesia.

Methodology: An IRB approved study used a double blinded post test only intervention with each subject receiving both treatments. Inclusion criteria were healthy RNs ≥ 21 years, palpable veins and no allergy to benzyl alcohol or lidocaine. Written consent was obtained and subjects had two IV insertions following pre-analgesia. Pain was rated on a 0-10 Likert scale after each insertion. Subjects were asked to state IV preference before IVs were removed. Paired t-tests were used to evaluate overall pain scores and preferred arm pain scores.

Results: The sample included 56 RNs. Mean years as RN: 18.6 ± 10.6 years; mean years in direct care 7.5 ± 4.7; mean years inserting IVs 5.2 ± 4.4. Differences were detected between overall BNS and Lido pain scores (2.36 ± 1.45 vs. 0.93 ±1.3; p ≤ 0.05). 89% chose the arm that was pre-mediated with Lido.

Discussion/Conclusion: Lido was the preferred IV insertion pre-analgesia. Pain scores were statistically different. Both scores were very low. There may be other parameters that affected pain during IV insertion.

Implications for Perianesthesia Nurses and Future Research: The study found statistical differences in perceived pain but this may not be clinically significant. Lido will remain the peripheral intravenous insertion analgesia in our outpatient day surgery unit.