
Abstract:

BACKGROUND: Intradermal buffered lidocaine is known to be effective in producing local anesthesia prior to IV catheterization. Recently, intradermal bacteriostatic normal saline has been suggested as a possible alternative.

OBJECTIVE: To compare the efficacy of intradermal bacteriostatic normal saline with that of intradermal buffered lidocaine in providing local anesthesia to adult patients prior to IV catheterization.

METHODS: In a randomized, double-blind, parallel-design, quasiexperimental study, we compared pain ratings of adult patients receiving either intradermal buffered lidocaine or intradermal bacteriostatic normal saline before IV catheterization. We measured pain at venipuncture through the use of a verbal numeric rating scale, used the test to compare group differences, and performed an analysis of covariance to test for outcome differences related to age, sex, and race or ethnicity.

RESULTS: The final sample (N = 148) was 65% women and 82% white, with a mean age of 52 years (range, 19 to 80 years). Demographic characteristics between the two treatment
groups were similar. Intradermal buffered lidocaine was demonstrated to be significantly superior to intradermal bacteriostatic normal saline in reducing the pain of IV catheterization (P = 0.007). Differences in pain ratings between the two groups were not associated with age, sex, race or ethnicity, catheter size, or location of the IV site.

CONCLUSIONS: Intradermal buffered lidocaine was superior to intradermal bacteriostatic normal saline in providing local anesthesia prior to IV catheterization in this group of predominately white adults and should be the solution of choice for venipuncture pretreatment.