

## **The vapocoolant significantly decreased venipuncture pain in adults compared with placebo and was well tolerated with minor adverse effects that resolved quickly” Mace (2016).**

### Abstract:

**INTRODUCTION:** Topical anesthetics are used to decrease procedural pain such as venipuncture. Advantages of vapocoolants include rapid onset, ease of application, low cost, and lack of associated pain of injection and other needlestick-related risks. We hypothesized that the pain of venipuncture would be reduced by at least 1.8 points on a 10-point numerical rating scale after application of a vapocoolant compared with placebo.

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**METHODS:** We conducted a prospective, randomized, double-blind controlled trial of vapocoolant vs placebo spray in 100 adults (ages 18-80) requiring venipuncture in a hospital emergency department or observation unit. The primary efficacy outcome was the difference in pain scores immediately after venipuncture, measured on a 10-point verbal numeric rating scale from 0 (none) to worst (10). Safety outcomes included local adverse effects (edema, erythema, blanching) and changes in vital signs (VS).

**RESULTS:** Patient characteristics and venipuncture procedure were not significantly different for the 2 groups. The median (interquartile range) pain of venipuncture was 3 (1.2-5) in the placebo group and 1 (0-3) in the vapocoolant group,  $P < .001$ . Skin checklist revealed the following: vapocoolant-minimal blanching 4%, minimal erythema 18% which resolved within 5 minutes; placebo-no visible skin changes. Photographs at 5 to 10 minutes revealed no visible skin changes in any patient. There were 2 complaints: “very wet and cold on skin” (placebo) and “felt burning on skin” (vapocoolant).

**CONCLUSION:** The vapocoolant significantly decreased venipuncture pain in adults compared with placebo and was well tolerated with minor adverse effects that resolved quickly. There were no significant differences in VS and no visible skin changes documented



at the site by photographs taken within 5 to 10 minutes postspray/venipuncture.

Reference:

Mace, S.E. (2016) Prospective, randomized, double-blind controlled trial comparing vapocoolant spray vs placebo spray in adults undergoing venipuncture. The American Journal of Emergency Medicine. January 7th. .

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