

Cosmetic Surgery Times

Topicaine® Gel More Effective Anesthetic than EMLA and Ela-Max 5 30-minute Topical Application Blocks Nd:YAG Pain

By Coriene Hannapel

Contributing Editor

Reno, Nev. — Effective anesthesia to laser-induced pain stimuli was demonstrated in a comparison of three topical anesthetics, with Topicaine and ELA-Max 5 proving superior to EMLA after a 30-minute application time, and with the highest level of anesthetic efficacy obtained with Topicaine and EMLA 30 minutes after their removal.

Efficacy was determined by statistical comparison with a control at the three time intervals. Topicaine and ELA-Max 5 were statistically superior to control 15 and 30 minutes after removal.



Dr. Friedman

"In addition, Topicaine and EMLA demonstrated decreasing mean pain scores 15 and 30 minutes after their removal, while ELA-Max 5 demonstrated a steady state of anesthesia," reported Paul M. Friedman, M.D., at the annual meeting of the American Society for Laser Medicine and Surgery.

The improved efficacy of Topicaine and EMLA 30 minutes after their removal "was likely secondary to a reservoir of anesthetic that was stored in the stratum corneum during application, with later diffusion to dermally located sensory nerves. These findings support prior studies suggesting that additional clinical benefit may be obtained even after anesthetic removal," said Dr. Friedman.

The prospective, randomized, controlled study was undertaken to determine whether EMLA, ELA-Max 5, or Topicaine could provide effective anesthesia to laser-induced pain stimuli after only a 30-minute application period and to determine whether anesthetic effectiveness improved after removal, said Dr. Friedman, co-chief resident, department of dermatology, New York University School of Medicine.



Increasing Need

"With the emergence of new laser and surgical techniques, the need for effective and rapid topical anesthesia continues to increase," said Dr. Friedman.

"Laser-induced pain stimuli have shown

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advantages for comparing topical anesthetics by providing reproducible, quantifiable, well-controlled stimuli with selective activation of nociceptors," he added.

Equal amounts of the three topical anesthetics plus a control were randomly applied to eight test sites under occlusion on the volar forearms of 24 adult volunteers. After a 30-minute application time, the degree of anesthesia was assessed immediately by a Q-switched Nd:YAG laser that emitted energy at 1,064 nm.

The degree of anesthesia was again tested 15 and 30 minutes after removal of the anesthetics. Subjective responses to pain stimuli were recorded using a scale from zero (no pain) to four (maximal pain). The mean

scores for the time intervals were obtained. Analysis of the data was performed using ANOVA, Friedman-rank order test, and paired t-tests.

The Products

EMLA, the most commonly used topical agent, has been proven effective in several clinical trials. This anesthetic consists of 2.5 percent lidocaine and 2.5 percent prilocaine in an oil-in-water emulsion. "EMLA has shown dermal analgesia after application under an occlusive dressing for 60 minutes, with inadequate analgesia after application for 30 minutes," said Dr. Friedman.

ELA-Max 5, a 5 percent lidocaine cream in a liposomal delivery system, has a recommended application time of 15 to 45 minutes with no occlusion required.

"This agent is marketed for the temporary relief of anorectal pain in accordance with its OTC monograph," said Dr. Friedman. "However, there is no medical reason why it cannot be used as a skin anesthetic."

Topicaine, which consists of 4 percent lidocaine in a gel microemulsion drug delivery system, was released in 1997 for use prior to electrolysis, and is gaining popularity as a topical anesthetic prior to laser hair removal, said Dr. Friedman. The recommended application time is 30 to 60 minutes under an occlusive dressing.

Dr. Friedman has no financial interest and received no financial support from the manufacturers of the three topical anesthetics or laser used in this study. CST

FOR MORE INFORMATION

■ Friedman PM, Fogelman JP, Levine VJ, Ashinoff R. Comparative study of three topical anesthetics after 30-minute application time. *Lasers Surg Med* 2000;(suppl 12):19.

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