

The use of skin needling for the delivery of a eutectic mixture of local anesthetics.

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Author information

Abstract

AIM:

The use of skin needling is believed to aid the transdermal delivery of drugs, even if it is mostly used for skin collagen induction. The aim of this paper was to use skin needling, combined with a local anesthetic EMLA (eutectic mixture of lidocaine and prilocaine), as a way to enhance transdermal drug penetration and optimize the analgesic effects of common local anesthesia.

METHODS:

We recruited 15 patients. For each patient of our study we defined a skin area of 3 cm² from two forearms: on one side, we used skin needling first and immediately thereafter applied the EMLA in occlusion for 60 minutes; on the other one, we only applied EMLA in occlusion for 60 minutes. Then, pain was induced in each patient's forearm by introducing a 27 G needle into the skin 4 mm deep three times. Lastly, pain sensation measures were registered and a middle value was calculated.

RESULTS:

When skin needling is used in conjunction with EMLA applied in occlusion for 60 minutes on skin forearms, the level of pain sensation registered was significantly reduced on a Visual Analogue Scale compared to the application of EMLA alone.

CONCLUSION:

The use of skin needling can improve the transdermal delivery of an emulsion-like eutectic mixture of local anesthetics (EMLA) and can introduce the use of this method for delivering topical molecules in dermatology.