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Topical anesthetic efficacy on palatal mucosa pretreated with microneedles

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Abstract
This research evaluated whether topical anesthetic efficacy increases on palatal mucosa pretreated with microneedles.

Key words:
Microneedles, Topical Anesthetic, Oral mucosa.

Introduction

This research evaluated whether topical anesthetic efficacy increases on palatal mucosa pretreated with microneedles.

Results and Discussion

In this crossover, randomized, double-blind study, 20 male volunteers were submitted to topical application of microneedles or flat patches on palatal mucosa, bilaterally in the canine region followed by topical anesthesia procedure with EMLA® (Eutectic mixture of lidocaine and prilocaine) during 2 or 5 minutes. Immediately after, an infiltrative anesthesia was performed by using a 30-gauge short needle and 0.3 mL of lidocaine 2% with epinephrine 1:100,000. Pain sensation during needle insertion and local anesthetic injection was evaluated by using 2 different visual analogical scale (VAS). VAS (in mm) results
The use of microneedle as a pretreatment of palatal mucosa did not increase topical anesthetic efficacy of EMLA in reducing pain during needle insertion or local anesthetic injection after 2 min of topical application. However the efficacy of EMLA after 5 minutes of application resulted in reduction of pain during needle insertion, but not to local anesthetic injection (p>0.05).

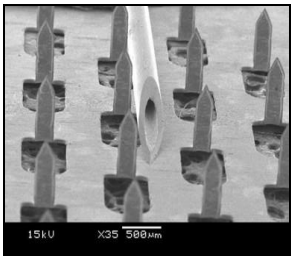

Image 1. MEV – Microneedles and hypodermic needle.

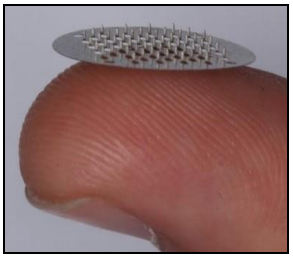

Image 2. Patch of microneddles.

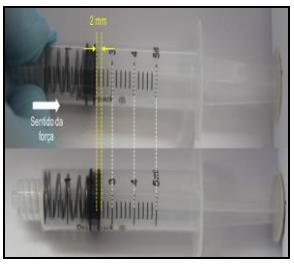

Image 3. Application device.

Conclusions

In conclusion, microneedle treatment of palatal mucosa was able to increase topical anesthetic efficacy of EMLA®

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