

Abstract:

Aim: Pain control is an important aspect of ED patient management, and there are many different protocols used around the world influenced by both availability of local resources as well as staff competency and experience. This study aims to evaluate the use of topical ketamine in acute pain reduction by directly comparing it to lidocaine-prilocaine (EMLA) cream.

Materials and methods: In this randomized clinical trial, 300 adult patients classified as level 4 or 5 by ESI triage system were enrolled. These patients were divided randomly into three groups. The site of venipuncture was covered with 2 g of topical ketamine cream 10% in group one, 2 g of 5% EMLA cream in group two, and finally, in group 3 (control group), was covered with placebo (2 g of cold cream). The primary end point of the study was reported pain severity with secondary end points being onset of local anesthesia as well as any side effects noted.

Results: The data gathered showed pain score during venipuncture in both intervention groups were significantly lower when compared to the control group ($P < 0.05$). However, pain score did not differ between the 2 intervention groups ($P = 0.395$). There was no statistically significant difference between the ketamine or EMLA in onset of local anesthesia ($P = 0.419$). We noted itching and irritation was significantly higher in the EMLA group when compared to ketamine ($P < 0.05$).

Conclusion: This study showed that local cutaneous ketamine is as effective as EMLA in relieving pain during venipuncture.

Reference:

Heydari F, Khalilian S, Golshani K, Majidinejad S, Masoumi B, Massoumi A. Topical ketamine as a local anesthetic agent in reducing venipuncture pain: A randomized controlled trial. *Am J Emerg Med.* 2021 Apr 3;48:48-53. doi: 10.1016/j.ajem.2021.03.055. Epub ahead of print. PMID: 33836388.