PubMed

Abstract

Full text links

SpringerLink FULL-TEXT ARTICLE

J Anesth. 2012 Apr;26(2):236-41. doi: 10.1007/s00540-011-1272-7. Epub 2011 Nov 3.

Role of gabapentin in preventing fentanyl- and morphine-withdrawal-induced hyperalgesia in rats.

Wei X[1], Wei W.

Author information

Abstract

PURPOSE: This study was undertaken to examine the effect of gabapentin for preventing hyperalgesia induced by morphine and fentanyl withdrawal in rats.

METHODS: To induce hyperalgesia, Sprague Dawley (SD) rats were subcutaneously injected with fentanyl four times at 15-min intervals (60 μg/kg per injection), resulting in total dose of 240 μg/kg over 1 h, and morphine 10 mg/kg twice daily for 7 days. The effect of gabapentin was detected with behavioral tail-flick and paw-withdrawal tests.

RESULTS: Drug termination produced significant decrease in antinociception thresholds ($P < 0.05$ vs. saline group), indicating that the rats became sensitive to thermal stimuli. In rats that received combined treatment with fentanyl/morphine and gabapentin (25/50 mg/kg), results demonstrated that there were no significant decreases in antinociception thresholds (vs. saline group) after opioid withdrawal. Gabapentin (50 mg/kg) could also prevent morphine tolerance. The 50% effective dose (ED50) value was 12.5 mg/kg in tail-flick and 13.6 mg/kg in paw-withdrawal tests.

CONCLUSIONS: The study showed that gabapentin can significantly prevented opioid-induced hyperalgesia (OIH) induced caused by fentanyl and morphine, suggesting a role for the addition of gabapentin in the perioperative period and during chronic pain treatment as an effective drug to prevent OIH.

PMID: 22048285 [PubMed - indexed for MEDLINE]

MeSH Terms, Substances

LinkOut - more resources

PubMed Commons

PubMed Commons home

0 comments

How to join PubMed Commons