

Synergism between fentanyl and tramadol in tonic inflammatory pain: The orofacial formalin test

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Opioids have been used for long time to management of pain, the coadministration of two opioids may induce synergism. The present study was conducted to determine the antinociceptive interaction between the dual mechanism of action of tramadol compared to the main of fentanyl antinociception in the orofacial formalin which represents a model of persistent cutaneous nociception in the region innervated by the trigeminal nerve. The i.p. administration of tramadol and fentanyl induced a dose-dependent antinociception with an ED₅₀ of 2.97±0.32 mg/kg for phase I and 1.79±0.30 mg/kg for phase II and 0.062±0.0040 mg/kg in phase I and 0.041±0.0039 mg/kg in phase II, respectively. The coadministration of fentanyl with tramadol induced synergism in both phases of the test with an interaction index of 0.343 and 0.163 for phase I and phase II, respectively. This finding could be explained by the more complex pharmacology of tramadol compared to fentanyl. © 2011 Springer Science+Business Media, LLC