

عنوان مقاله:

Effects of administration of histamine and its H₁, H₂, and H₃ receptor antagonists into the primary somatosensory cortex on inflammatory pain in rats

محل انتشار:

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خلاصه مقاله:

Objective(s): The present study investigated the effects of microinjection of histamine and histamine H₁, H₂, and H₃ receptor antagonists, chlorpheniramine, ranitidine and thioperamide, respectively into the primary somatosensory cortex (PSC) on inflammatory pain. **Material and Methods:** Two stainless steel guide canulas were bilaterally implanted into the PSC of anaesthetized rats. Inflammatory pain was induced by subcutaneous (SC) injection of formalin (50 µl, 2.5%) in the ventral surface of right hind paw. Time durations of licking/biting of the injected paw were recorded as a pain measure. **Results:** Formalin produced a biphasic pattern of licking/biting of the injected paw. Histamine at doses of 0.5, 1, and 2 µg decreased the intensity of pain. Chlorpheniramine and ranitidine at the same doses of 1 and 4 µg had no effects, whereas thioperamide at a dose of 4 µg suppressed both phases of formalin-induced pain. Pretreatments with chlorpheniramine and ranitidine at the same dose of 4 µg prevented histamine (2 µg)-induced antinociception. Antinociceptive effects were observed when thioperamide at doses of 1 and 4 µg was used with 0.25 and 1 µg of histamine, respectively. The antinociceptive effects induced by histamine (2 µg) and thioperamide (4 µg) were prevented by prior treatment with naloxone (4 µg). **Conclusion:** These results indicate that at PSC levels, histamine through post-synaptic H₁, H₂, and pre-synaptic H₃ receptors might be involved in pain modulation. The endogenous opioid system may be involved in histamine- and thioperamide-induced antinociception.

کلمات کلیدی:

Formalin-induced pain, Histamine, Histamine receptor antagonists, Primary somatosensory cortex, Rats

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