

عنوان مقاله:

The effect of intracerebroventricular injection of CGRP on pain behavioral responses and monoamines concentrations in the periaqueductal gray area in rat

محل انتشار:

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خلاصه مقاله:

Objective(s): Calcitonin gene related peptide (CGRP) receptors are widely distributed in the central nervous system. The aim of this study was to investigate the effects of intracerebroventricular (ICV) injection of CGRP on pain behavioral responses and on levels of monoamines in the periaqueductal gray area (PAG) during the formalin test in rats. Materials and Methods: Twenty-four male rats were studied in four groups (n=۶). CGRP was injected into the left cerebral ventricle (۱.۵ nmol, ۵ µl). After ۲۰ min, formalin (۲.۵%) was subcutaneously injected into the right hind paw. Behavior nociceptive score was recorded up to ۶۰ min. During the formalin test, the PAG was subjected to microdialysis and levels of norepinephrine, ۳-methoxy-۴-hydroxyphenyl-glycol (HMPG), dopamine, ۳,۴-dihydroxyphenylacetic acid (DOPAC), serotonin and ۵-hydroxyindole-acetic acid (HIAA) were measured by HPLC. Results: ICV injection of CGRP lead to a significant pain reduction in acute, middle and chronic phases of the formalin test. Dialysate concentrations of norepinephrine, HMPG, dopamine, DOPAC, serotonin and HIAA in the PGA area showed an increase in acute phase, middle phase and beginning of the chronic phase of the formalin test. Conclusion: CGRP significantly reduced pain by increased concentrations of monoamines and their metabolites in dialysates from PAG when injected ICV to rats

کلمات کلیدی:

CGRP, Formalin test, HPLC, Monoamines, Microdialysis

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