

論文名 : Inhibitory effects of fluoxetine, an antidepressant drug, on masseter muscle nociception at the trigeminal subnucleus caudalis and upper cervical spinal cord regions in a rat model of psychophysical stress. (フルオキセチンは心理ストレスによる三叉神経脊髄路核尾側亜核・上位頸髄部での咬筋侵害応答の増強を抑制する) (要約)

新潟大学大学院医歯学総合研究科

氏名 中谷暢佑

---

This study aimed to determine (1) if repeated forced swim stress (FST) could increase Fos responses in the trigeminal subnucleus caudalis (Vc), since nociceptive neural activity in the Vc region could play critical roles in deep craniofacial nociception, evoked by masseter muscle (MM) injury with formalin and (2) if serotonin-reuptake inhibitor, fluoxetine, administered daily after each FST had inhibitory effects on MM-evoked Fos responses. Rats were subjected to FST or sham conditioning from Day -3 to -1. On Day 0, effects of repeated FST on Fos responses were assessed in several areas of the Vc region, including the ventrolateral (vl) area of trigeminal interpolaris (Vi)/Vc transition, dorsal Vi/Vc, paratrigeminal nucleus, middle portion of the Vc (mid-Vc), and the caudal portion of Vc (caudal-Vc) regions. In separate groups, fluoxetine or saline was administered systemically 30 min after each FST for 3 days. On Day 0, the MM injury-evoked Fos response was assessed in the Vc region. FST increased immobility time, which was prevented by fluoxetine. FST increased Fos expression evoked by MM injury in the vl-Vi/Vc, and superficial and deep laminae at the mid- and caudal-Vc regions, while FST alone did not increase Fos responses. Further, we determined roles of fluoxetine on increased Fos responses under FST conditions. At the obex level, fluoxetine had inhibitory effects on Fos responses in the vl-Vi/Vc region only, while in mid- and caudal-Vc regions, fluoxetine significantly decreased Fos expression. Fluoxetine had no effect on Fos responses under sham conditions. These results indicate that repeated psychophysical stress has facilitatory effects on MM nociception via the changes of serotonergic mechanisms.