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★平成２８年度卒業生「中崎聡君、田所和也君」の研究成果が口腔科学に関する国際的専門誌“European Journal of Oral Sciences”に掲載されました!!!

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Docosahexaenoic acid attenuates inflammation-induced hyperexcitability of trigeminal spinal nucleus caudalis neurons associated with hyperalgesia in rats

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The present study investigated whether daily systemic administration of docosahexaenoicacid (DHA) in rats could attenuate the hyperexcitability of trigeminal spinal nucleus caudalis (SpVc) neurons associated with hyperalgesia. Inflammation was induced in rats by injecting complete Freund's adjuvant into the whisker pads. The threshold of escape from mechanical stimulation applied to the whisker pads in inflamed rats was significantly lower than that in na€ıve rats. The lowered mechanical threshold in the inflamed rats was returned to that in na€ıve rats by 3 d intraperitoneal administration of DHA. The mean discharge frequency of SpVc neurons in inflamed rats was significantly decreased after DHA administration for 3 d with both non-noxious and noxious mechanical stimuli. DHA administration also significantly decreased the increased spontaneous discharges of SpVc neurons in the inflamed rats, while DHA significantly diminished noxious pinch evoked after the discharge frequency and the expanded receptive field in the inflamed rats was returned to control levels. These results suggested that chronic administration ofDHA attenuates inflammation-induced mechanical hyperalgesia associated with the suppression of the hyperexcitability of SpVc neurons. These findings support the potential use of DHA as a therapeutic agent in complementary alternative medicinefor mitigating trigeminal inflammatory hyperalgesia.

ハイライト：ドコサヘキサエン酸（DHA）は侵害受容性疼痛を抑制することが、これまで、本研究室の研究で 判明している（Mitome et al., Neurosci Res, in press）。今回、著者らは末梢組織の炎症に伴い生じる“痛覚過敏の症状”と痛覚過敏発現に重要な役割を果たす”疼痛伝達ニューロンの興奮性の変化”がDHAの慢性投与により顕著に抑制されることを明らかとした。本研究の成果はDHAが臨床の場において非ステロイド性鎮痛薬（NSAIDｓ）に変わる新たな副作用のない炎症性疼痛治療薬となる可能性と代替医療に貢献することを示唆している！