Preventive effect of fluvastatin on the development of medication-related osteonecrosis of the jaw

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（様式６－２）

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論　文　名	Preventive effect of fluvastatin on the development of medication–related osteonecrosis of the jaw （薬剤関連顎骨壊死の発症に対するフルバスタチンの予防的効果の検証）
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論　文　審　査　の　結　果　の　要　旨

Medication-related osteonecrosis of the jaw (MRONJ) occurs in patients taking bisphosphonates or denosumab, and mainly relates to surgical triggers such as tooth extraction. To date, MRONJ is reported to be unresponsive to surgical or medical treatment. HMG-CoA reductase inhibitors, statins, are widely used for hyperlipidemia patients. Statins have also been reported to have many functions and promote both soft and hard tissue healings of tooth extraction socket. In the present study, the possibility of the local application of fluvastatin (FS) at the tooth extraction site for the prevention of the development of MRONJ was investigated.

Zoledronate and dexamethasone were injected subcutaneously three times a week to rats, until euthanasia to establish MRONJ model. Two weeks after the start of subcutaneous injections, right maxillary first molar was extracted, and FS was injected in the proximity of the extraction socket. Two weeks after the tooth extraction, all animals were euthanized and extraction sockets were analyzed histomorphometrically.

Both epithelial discontinuity and necrotic bone were indicated in MRONJ group, however, in FS group the epithelial continuity was recovered and the area of necrotic bone was reduced. μ-CT findings indicated that new bone formation was observed especially in FS group.

The present findings suggest that the concurrent tooth extraction with single and local injection of FS prevents the development of MRONJ. This paper contains novel findings and was deemed worthy as a thesis paper for Doctor of Philosophy (Dental Science).