

Big Data-driven Dental Research

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[Background/purpose]

Chronic periodontitis and tooth loss contribute to cognitive decline. Since many biological processes are shared by loss of teeth and loss of pulps, this study investigated the potential association between loss of pulp and the development of dementia.

[Materials and methods]

A retrospective cohort analysis was conducted to investigate the association between dental treatment and the development of dementia. The records of dental treatment during the 10 years prior to the first diagnosis of dementia were extracted from the Elderly Cohort Database of the National Health Information Sharing Service of Korea. The independence of dementia compared to the number of pulps or teeth removed was evaluated using the chi-squared test. The subjects were grouped by the number of teeth or pulps treated, and their odds ratio for dementia was calculated.

[Results]

Analysis of 591,592 sessions for pulpectomy and 710,722 sessions for tooth extraction from 558,147 individuals revealed a significant association with Alzheimer's dementia, but not with vascular or unspecified dementia. The number of dementia patients based on the number of pulps or teeth extracted were significantly different across age groups. The odds ratios demonstrated a tendency to increase with the number of dental treatments and decrease with age at the time of diagnosis of dementia. The number of pulps removed to achieve a notable impact on Alzheimer's dementia was found to be lower than the number of teeth extracted.

[Conclusion]

The loss of pulp increased incidence of Alzheimer's dementia, with the impact being more pronounced in younger geriatric groups.

Profile

- * Associate Dean for Planning and Coordination, Seoul National University School of Dentistry
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- * Present, Finance director, Korean Officials Dental Association
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