

論文審査の結果の要旨

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論文題目 Association of oral Epstein-Barr virus with oral health status in Japanese adults (日本人成人における口腔の Epstein-Barr ウイルスと口腔の健康状態との関係)			
論文審査担当者			
主査	教授 太田 耕司	印	
審査委員	教授 二川 浩樹		
審査委員	教授 水野 智仁		
〔論文審査の結果の要旨〕			
<p>Epstein-Barr virus (EBV) is a member of the herpesviridae family. It remains unclear whether EBV is related to poor oral health among middle-aged and older Japanese people. The aim of this study was to clarify the relationship between oral EBV and oral health status in Japanese adults.</p> <p>A total of 124 patients who visited the Department of Oral Health of Hiroshima University Hospital were analyzed in this study. In addition, 43 dependent older people who had a certified need for long-term support or nursing care were enrolled. Oral rinse samples were obtained by asking the subjects to rinse their mouths with saline. Orcellex® Brush (Rovers Medical Devices) was employed to collect samples from the tongue surface in dependent older people. Real time PCR analysis was performed to determine EBV DNA copy number. PCR amplification of the bacterial 16S rRNA gene was performed to detect periodontal disease-related bacteria. Propensity scores were calculated by logistic regression analysis of 11 clinical factors (age, sex, remaining teeth, denture use, smoking, hypertension, diabetes, hyperlipidemia, stroke, heart disease, and bone and joint disease). Statistical analysis was performed using SPSS version 24.0. $P < 0.05$ was considered to indicate a statistically significant difference.</p> <p>EBV DNA was detected in 16 of 124 participants (12.9%). Ten of the 38 participants with periodontal pockets ≥ 6 mm were EBV DNA positive (26.3%). There was a significant association between EBV DNA positivity and probing depth ($P = 0.01$). In addition, there was a significant association between bleeding on probing (BOP) and EBV DNA positivity ($P = 0.03$). EBV DNA copy number was investigated in 16 EBV positive cases. A significant association was not found between EBV DNA copy number and periodontal pocket depth or BOP. Next, propensity score matching was performed between participants</p>			

with ≥ 4 mm periodontal pockets, BOP or both (i.e., participants with poor periodontal health) and those without ≥ 4 mm periodontal pockets and BOP (i.e., participants with good periodontal health) to investigate the relationship between EBV and periodontal health status. Thirty-five matched pairs were identified among the participants. Participants with poor periodontal health exhibited a higher EBV DNA positivity rate (25.7%) than those with good periodontal health (0.0%). A significant association was found between EBV DNA positivity and periodontal health status ($P = 0.001$). Total 65 samples were collected by inserting sterilized paper points into the periodontal pocket. Sterilized paper points were employed to obtain gingival crevicular fluid. Of 65 cases, 6 cases showed EBV DNA positive. Patients with ≥ 4 mm periodontal pockets with BOP recorded a higher EBV DNA positivity rate (15.8%) than those without ≥ 4 mm periodontal pockets with BOP (6.5%). However, no significant difference was found between EBV DNA positivity and BOP or periodontal pockets with BOP. These results suggest the presence of EBV in periodontal pocket.

EBV DNA was detected in 3 of 43 dependent older people (7.0%). EBV DNA was not significantly associated with clinical factors. People with poor oral hygiene showed increased EBV DNA-positive rates (33.3%) compared with those with good or fair oral hygiene statuses (9.1% and 3.4%, respectively), but the association was not significant.

The results of this study suggest that EBV localizes in periodontal pockets. The oral cavity is thought to be an initial site for EBV infection. An inhibited local immune system and local periodontal inflammation may provide the chance for EBV to infect oral epithelial cells.

以上の結果から、本論文は中高年の日本人における Epstein-Barr ウイルスと歯周病の関係について新規の知見について述べたものと認められた。よって審査委員会委員全員は、本論文が蘇承翊に博士（口腔健康科学）の学位を授与するに十分な価値のあるものと認めた。