

## C-2. Genetic polymorphisms of periodontal disease in Korean population

신승윤<sup>1,4</sup>, 김경화<sup>1</sup>, 박옥진<sup>2</sup>, 김태일<sup>1</sup>, 설양조<sup>1</sup>, 이용무<sup>1</sup>, 류인철<sup>1</sup>, 김각균<sup>2</sup>, 구영<sup>1</sup>, Hiromasa Yoshie<sup>3</sup>, 정종평<sup>1</sup>

<sup>1</sup>서울대학교 치과대학 치주과

<sup>2</sup>서울대학교 치과대학 구강악안면 감염 및 면역학교실

<sup>3</sup>Division of Periodontology, Department of Oral Biological Science, Niigata University, Japan

<sup>4</sup>성균관대학교 의과대학 삼성서울병원 치과진료부 치주과

### 연구 배경

Periodontal disease is considered to have multiple risk factors. Genetics, age, sex, smoking, socioeconomic factors and certain systemic diseases were considered as risk factors besides the presence of microorganisms. It was the aim of this investigation to evaluate the prevalence of the genetic polymorphisms of IL-1 and Fc  $\gamma$ R and their associations with periodontal disease in Korean population.

### 연구방법 및 재료

Ninety periodontally healthy control subjects, 40 patients with severe chronic periodontitis(CP) and 23 patients with aggressive periodontitis (AgP) were included in this study. Clinical parameters including probing depth(PD), clinical attachment level(CAL), bleeding on probing(BOP), supragingival plaque accumulation(PI) and alveolar bone loss(BL) were assessed.

Genomic DNA was obtained from peripheral blood. The genotyping was done in IL-1A+4845, IL-1B+3954, IL-1B-511, IL-1RN, Fc  $\gamma$ RIIIa, Fc  $\gamma$ RIIIb by using PCR and electrophoresis.

### 연구결과

1. In IL-1A+4845 genotyping, allele 12 genotype was found in 46.7-60.9% subjects and allele 22 genotype was detected in only one control subjects
2. In IL-1B+3954 genotyping, allele 2 was rarer than in IL-1A+4845. Allele 12 genotype was found in 4.4-14.3% and allele 22 genotype could not be detected.
3. There was no statistically significant difference between 3 groups in IL-1A+4845, IL-1B+3954, IL-1B-511 and IL-1RN genotypes( $p > 0.05$ )
4. There was no statistically significant difference of IL-1 composite genotype(IL-1A+4845 allele 2 + IL-1B+3954 allele 2)( $p > 0.05$ ).
5. Statistically significant differences were found in Fc  $\gamma$ RIIIa 158V/F polymorphism ( $p < 0.05$ ).

6. There was no significant difference between 3 groups in Fc  $\gamma$ RIIIb NA1/NA2 genotype ( $p > 0.05$ ).
7. There was no significant difference of Fc  $\gamma$ R composite genotype (Fc  $\gamma$ RIIIb NA2 plus Fc  $\gamma$ RIIIa 158V) ( $p > 0.05$ ).

## 결론

Within the limit of our experiment, it is concluded that Fc  $\gamma$ RIIIa 158V/F polymorphism have correlation with periodontal disease characteristics. Comparing with other ethnic groups, it is assumed that there was ethnic difference in the prevalence of genetic polymorphism in periodontal disease.

\* This study was supported by a grant of the Korea Health 21 R&D Project, Ministry of Health & Welfare, Republic of Korea, (02-PJ1-PG10-20507-0008)