Defect of netrophil chemotactic function is one of the etiology of aggressive periodontitis.

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ABSTRACT

Characteristic of progressive destructive periodontal tissue in Aggressive Periodontitis is a feature of disruption of the host-homeostasis as the results of imbalance between host response and specific bacterial pathogenic which presents at gingival sulcus. The objective of this study was to evaluate netrophil function of Aggressive periodontitis molecularly by means of gen polymorphism of Formyl Peptide Receptor (FPR1) at the surface of netrophil cell, the level of IL-8 and netrophil chemotactic. The results of the study can be used as an early detection, prevention or to arrest tissue destruction and to restore a health-associated homeostasis in order to get better prognosis of Aggressive Periodontitis. The study was conducted during 20 months in Padjadjaran University Bandung. Research design used case control method and sample selection is done in consecutive sampling of 32 aggressive periodontitis patients and 29 non aggressive periodontitis patients who were included in the inclusion criteria. Research materials were venous blood and gingival crevicular fluid. PCR-Sequencing method was used to assess of gene FPR1 Polimorphism. ELISA method was used to measure IL-8 level in gingival crevicular fluid, and Human CD66abc Microbead Kit by MACS Separation method was used to assess netrophil chemotactic. Chi-square test, Fisher’s exact, unpaired t tests were employed to analyse the differences of characteristic, allele frequencies and genotypic, bivariate analysis to analyse of risk factors and biserial point correlation to analyse correlation between risk factors. The results showed the existence of c576T>C>G gene FPR1 polymorphism 5.040 time-fold (p=0.006; OR=5.040 while the down regulation of IL-8 (≤0.064 pg/μl ) is 34.5 times-fold of having aggressive periodontitis (OR=34), and c576T>C>G gene FPR1 polymorphism had relationship with IL-8 level to cause aggressive periodontitis (r=0.5; p=0.0287) and 301 G>C gene FPR1 polymorphism had correlation with the reduce of netrophil chemotactic (r=0.86; p=0.029). In conclusion showed that c576T>C>G and 301 G>C gene FPR1 polymorphism, the down regulation of IL-8 (≤0.064 pg/μl) and the reduce of netrophil chemotactic function were the risk factors related to aggressive periodontitis.