Abstract

Periodontal disease is an inflammation and degeneration of chronical dental support tissue, accumulative, and progressive that caused tooth loss. Periodontal disease is caused by bacteria that has an ability to activate host response to produce pro-inflammatory mediator. Pro-inflammatory mediator causes collagen fibers degradation or destruction in periodontal tissue. Collagen cross-link of periodontal tissue would be broken down and released into serum, and then excreted through urine. Collagen cross-link is called pyridinium cross-link, such as pyridinoline, deoxypyridinoline, N-telopeptide, and C-telopeptide (ICTP). This study was to investigate the level in gingival crevicular fluid as an indicator of alveolar bone resorption. This study used 24 subjects with periodontal disease and 6 healthy subjects. Dividing of periodontal disease was based on periodontal index and every subject had minimum 20 teeth in mouth. Gingival crevicular fluid was taken at mesial site of maxillary posterior tooth by paperpoint and was measured by ELISA technique. The result showed that the lowest level of ICTP was in control group, and the highest level was in grade 3 periodontitis group. The level of ICTP increased followed by periodontal disease progression. The result of Kruskal-Wallis-H and Mann-Whitney-U test showed that was significant difference in ICTP between subject with and without periodontitis (p<0.05). It can be concluded that ICTP level in gingival crevicular fluid can be used as indicator of alveolar bone resorption in periodontal disease subjects.

Key words: alveolar bone resorption, C-telopeptide pyridinoline