

Enhancement Interleukin-1 (IL-1) on LPS-induced Periapical Inflammation

ABSTRACT

Backgrounds. The pulp chamber is mostly infected by anaerob gram negative bacteria and one of them is *Porphyromonas gingivalis*. The cell wall of this bacteria containing Lipopolysaccharide (LPS). LPS can penetrate to the periapical tissue, act as endotoxin in host and cause periapical inflammation that leading to bone destruction. This inflammation is mediated by immune system so we can found the inflammatory cell infiltrated in the lesion. One of the inflammatory cell that has an important role in periapical inflammation is IL-1. IL-1 is activated by the bacteria and the number is increasing during the inflammation process. **Purpose.** To know how much is the increasing number of IL-1 in periapical tissue induced by LPS. **Method.** We use laboratory experimental with the post test only control group design. A total of 21 sample was divided into 3 groups. Group A: control group, group B: the teeth were induced by lipopolysaccharide, group C: the teeth only induced by PBS. The animals were sacrificed 3 weeks after the experiment and prepared for histological examination of periapical tissue response. **Results.** According to the result, the IL-1 increases significantly in group B when lipopolysaccharide was applied in the pulp chamber. The increasing number of IL-1 is a complex process because of the contribution of TLR4, IL-1RI, myD88 and IRAK. **Conclusion.** There was an increasing number of IL-1 in periapical inflammation that induced by lipopolysaccharide.

Keywords : ***IL-1, Lipopolysaccharide, periapical, inflammation***