PROSPEK PROBIOTIK DALAM PENCEGAHAN AGRESIVITAS RESORBSI OSTEOKLASTIK TULANG ALVEOLAR YANG DIINDUKSI LIPOPOLISAKARIDA PADA PENYAKIT PERIODONTAL

(PROBIOTIC PROSPECT IN THE PREVENTION OF AGGRESSIVENESS OSTEOCLASTIC ALVEOLAR BONE RESORPTION INDUCED BY LIPOPOLYSACCHARIDE ON PERIODONTAL DISEASE)

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Abstract

This study was an experimental laboratory. The purpose of this study was to determine the role of probiotics in inhibiting the activity of pathogenic bacterial oral cavity. The result of study is expected to be used for prevention and treatment of periodontal disease which is still complex and derived products with high quality probiotics. The main product is the development potential of probiotics in maintaining oral health, especially periodontal disease is effectively and efficiently. This study used rats and divided into 4 groups: Group I, control without treatment; group II, induction of LPS E. coli for 5 days, Group III, LPS induction of E. coli + Probiotic Bacterial Lactobacillus casei injection for 5 days together, and group IV, induction of LPS E. coli for 5 days + 5 days injection of Lactobacillus casei. Immunohistochemical examination was done to evaluate the activity of osteoclasts in alveolar bone resorption to detect TRAP (tartarate-resistant acid phosphatase) and Carboxyterminal Telopeptide of Type 1 Collagen (1CTP) and subsequently analyzed the data collected statistically. The results of this study showed that induction of LPS could trigger the occurrence of alveolar bone resorption mediated by osteoclast and Lactobacillus casei administration both at the same time with the LPS induction or after LPS induction can inhibit osteoclastic alveolar bone resorption. In conclusion, clinically it can be interpreted that the administration of probiotic can be given at the beginning of periodontal disease occurs before or at the time of periodontal disease is underway.

Key words: lipopolysaccharide, Lactobacillus casei, osteoclast, alveolar bone resorption