IgY in Serum to Inhibit the Growth of Aggregatibacter actinomycetemcomitans and Porphyromonas gingivalis

ABSTRACT

Background. Porphyromonas gingivalis is the main cause of chronic periodontitis. Besides Porphyromonas gingivalis, there is also Aggregatibacter actinomycetemcomitans as the cause of agressive periodontitis. IgY is a type of immunoglobulin which is the main antibody of poultries, including: chicken, bird, reptile and lungfish. High concentration of IgY is found in chicken egg yolk. IgY can also be found in chicken blood that has already been given antigen. IgY inserted orally has specific target and is dependent on antigen-antibody interaction to foreign objects. IgY can be used as an alternative prevention the plaque accumulation which can cause periodontitis. IgY can also be used in various fields of medicine such as xenotransplantation, diagnosis and alternative antibiotics in therapy. Purpose. To prove IgY potential in serum to inhibit the growth of Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans.

Methods. Samples were divided into 3 groups, each group consists of 7 chickens. Control group was injected with 1 ml PBS, second group was injected with 1 ml Porphyromonas gingivalis bacteria and third group was injected with 1 ml Aggregatibacter actinomycetemcomitans bacteria. The diameter of zone of inhibition formed around paper disc was calculated with calipers.

Results. The study results showed that IgY in serum could inhibit the growth of Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans significantly.

Conclusion. IgY in serum can inhibit the growth of Porphyromonas gingivalis and Aggregatibacter actinomycetemcomitans bacteria.

Keywords: IgY, Serum, Porphyromonas gingivalis, Aggregatibacter actinomycetemcomitans