

LEVELS OF IMMUNOGLOBULIN G SALIVA IN AGGRESSIVE  
PERIODONTITIS RAT INDUCES WITH *PORPHYROMONAS GINGIVALIS*  
ATCC 33277

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Abstract

**Background:** *Porphyromonas gingivalis*, (*P. gingivalis*) is a gram-negative anaerobes that involved in the pathogenesis of aggressive periodontitis. This organism has a variety of virulence factors, such as lipopolysaccharides. The colonization of bacteria in gingival tissue is considered to be the first step in the pathogenic process of aggressive periodontitis resulting in tissue destruction. High levels of *P. gingivalis*-specific immunoglobulin G (IgG) are commonly observed, but there have not a variable host response to this organism appears to exist yet. Immunoglobulin G responses in adult periodontitis patients play role in colonization inhibition or elimination of *P. gingivalis*. The purpose of the present study was detection of IgG levels in saliva of aggressive periodontitis rats model that induced by *P. gingivalis* ATCC 33277. **Methods:** This study used male wistar rat samples and is divided into two groups. Group I is control or without treatment; Group II is rats that induced by *P. gingivalis* ATCC 33277 3 times a week for 2 month. The samples were observed by ELISA. Furthermore, the data were analyzed by T- test **Results:** The result show that Ig G levels in saliva increased in both of the groups; statistically showed there was significant difference between group I and II ( $p < 0,05$ ). **Conclusion:** Levels of Immunoglobulin G antibodies to *P. gingivalis* increased in saliva of aggressive periodontitis rats models. It can be helpful to the diagnostic in periodontal diseases.

**Key words:** *Porphyromonas gingivalis*, Aggressive Periodontitis, Immunoglobulin G, Saliva.

**Introduction**

The aggressive periodontal (AgP) diseases are characterized by relatively severe and rapid destruction of periodontal tissue. Bacterial induced inflammatory response plays a significant part in the etiology and pathogenesis of AgP.[1] The role of the specific host response to bacteria in the pathogenesis of AgP has been investigated. The main finding has been a significant elevation in the serum immunoglobulin G (IgG) levels to certain periodontal pathogens particularly *P. gingivalis*, in subjects with AgP compared healthy controls.[2]

*P. gingivalis* has been identified as major etiological agent in the initiation and progression of AgP.

Identification of *P. gingivalis* and determination of the specific host response against this organism are important to develop and assess new concept for the prevention and treatment of periodontal diseases associated with this microorganism.[3] *P. gingivalis*, a gram-negative anaerobic bacterium, molecule such as fimbriae, hemagglutinins, aggregation factors and lipopolysaccharides responsible for colonization have been identified previously as virulence factors. Detection of the organism is useful as indicator and predictor for the progression of periodontal disease.[4]

Immunoglobulin is clearly very important element of the adaptive immune system of host defence against antigenic exposures. Immunoglobulins are normally present in the serum and many other body fluids and