ABSTRACT

Background

Gingivitis is a form of abnormality in periodontal tissue which can be found in the general society. The patient does not realize the clinical difference in gingiva caused by lack of knowledge about dental health and also there has not been a single case of mortality because of gingivitis. Sickness of periodontal tissue is experienced by almost all people across the globe and it reaches 50% from total adult population.

Parasympathetic stimulus when mastication is crucial to increase the velocity of saliva’s flow, which will stimulate the polypeptide to show. In human, defensive polypeptide has two subfamilies, the Alpha defensine (HNP1-3) and Beta defensine (hBD-2) which interact with different targets, meanwhile hBD-2 specially interacts with lipopolysaccharide (LPS). Transforming Growth Factor Beta (TGF-β) is a peptide secreted for regulating proliferation, differentiation, and mortality of many kinds of cell.

Research Purpose

To explain the connection between mastication with increased content of hBD-2, HNP1-3, dan TGFβ, and also the decrease amount of Streptococcus sanguis and Streptococcus mutans bacteria on gingivitis.

Research Method

The method of this research is experimental with post test design observation to the patient of gingivitis. The subject of this research are 42 men from 17-22 years of age, each group consists of 14 men (healthy group, mastication; group of gingivitis, mastication; group of gingivitis, non mastication). Mastication uses standard gums (equal size, without sweetener and tastener) and it is done for a week, every time subjects wake up in the morning and the mastication is done for one minute (32 times). The subject’s saliva sample is contained in the eppendorf tube, which has been given Phenylmethlysulfonyl Fluoride (PMSF) 0.5 ml before.

Research Result

The test result of Elisa content hBD-2 shows the striking difference of the three groups, HNP1-3 content only shows the difference in group 1:2 and group 1:3, TGFβ shows the exact difference on those three groups. Real Time Polymerase Chain Reaction (RT PCR) shows quantity of Streptococcus sanguis which showed the difference between group 1:3 and group 2:3, the numbers of Streptococcus mutans do not show any difference on all groups.
Conclusion

About mastication’s role which caused the increase content of hBD-2 and TGFβ shows the meaningful relation in decreasing the quantity of bacteria is only to \textit{Streptococcus sanguis}

Keywords : S sanguis, S mutans, mastication, Antimicrobe polypeptide (AMPs)