The Effects of Using Tooth Paste Containing Thiocyanate Ions to Buffer and pH Saliva in 24 Hours (experimental clinical trial)

Staff: Ade Paramita, Risqa Rina Darwita and Anton Rahardjo
Student: -
Sponsor: -
Email: -

Natural defenses of the mouth are located in saliva, one of these is lactoperoxide-$\text{H}_2\text{O}_2$-thiocyanate system which can inhibit metabolism of acid-produced bacteria. In this modern life nowadays, many kind of tooth paste sell at store with its own variant which apparently threaten our natural mouth defenses. Therefore, a lactoperoxide system toothpaste was produced. Aim: to know the effect of tooth paste containing thiocyanate ion to salivary buffer and pH in 24 hours.

Method: A parallel design trial with 9 persons as trial subjects which was divided into two groups, they were control and trial group. The trial group would get a cup of toothpaste containing thiocyanate ion while the control groups got a cup of toothpaste devoid thiocyanate ion. Both of the groups would be examined the thiocyanate ion concentrate, salivary buffer and pH within 24 hours without brushing teeth. After that, subjects were in the wash out period to clean up all the effects of the first period. In the second period, subjects were examined again with brushing teeth each 12 hours. Salivary buffer was examined with Saliva Check Buffer strip, salivary pH was examined with lakmus paper from GC, and ion thiocyanate concentration was measured using micro plate reader with normal curve of KSCN.

Result: The toothpaste containing thiocyanate ion could add the concentration of thiocyanate ion in human saliva, but this result was gave no significant addition comparing to the addition by using the toothpaste devoid thiocyanate ion, based on T-test independent sample (p<0.05). Salivary buffer and pH were not given any significant changes after using the toothpaste containing thiocyanate ion. Conclusion: On this study, the toothpaste containing thiocyanate ion had not been proven effective to raise salivary buffer and pH.

Keywords: Thiocyanate ion, buffer saliva, pH saliva, 24 hours