Abstract

Background: Several studies showed that treatment of fluoride in enamel has an important role in the prevention of caries in patients with a history of high risk caries. Enamel are often exposed to fluoride forms a new bond (fluoroapatite) which is stable and difficult to dissolve in acidic conditions. And it affects in the adhesion strength of a composite restorative materials. Objective: To prove the difference tensile strength attachment surface tooth enamel with fluoride treatment and no fluoride treatment. Materials and Methods: 14 samples of bovine teeth were divided into two groups, each group consisting of 7 samples. After preparation, sample immersed in artificial saliva with pH 4.6 for three hours. Group I sample with fluoride treatment, group II sample without fluoride treatment, both groups then immersed in artificial saliva with pH 7 for 14 days. Then samples were inserted into plunger and withdrawn with the autograph engine. Data were analyzed using Independent t-test (p <0.05). Results: Treatment of fluoride that generates a new bond (fluoroapatite) that is resistant to acidic conditions. This led to reducing of enamel dissolution by acid etching so that decrease the porosity of enamel that causes the attachment strength of the composite against enamel is reduced. Conclusions: The strength of the composite tensile adhesion to enamel with fluoride treatment is lower than the enamel without fluoride treatments.

Keywords: Enamel, fluoride, high risk caries, tensile strength, composite