ABSTRACT

Teeth discoloration is considered disturbing performance, therefore bleaching become an option for teeth whitening. Hydrogen Peroxide (H₂O₂) is commonly used for bleaching, it is beneficial for teeth whitening but in other hand it has adverse effectin lowering micro hardness of the tooth. Hydrogen Peroxide can be found in pears. The objectives of this research were to determine the influences of application duration and immersion time of tooth when immersed in pear juice toward its discoloration and micro hardness.

An in vitro experimental study with pre-post test controlled group design were conducted using 28 permanent premolars teeth which divided into four groups. Group A and B: teeth were immersed in pear juice with concentration of 100% for 30 and 60 minutes/day. Group C and D were immersed in H₂O₂ 3% for 30 and 60 minutes/day each for 14 days. Tooth color and micro hardness of each tooth sample were recorded before and on 7th and 14th days after immersion. The data was analyzed by friedman test, repeated anova, one-way anova and post hoc.

The average of tooth color index based on the duration of application in all four groups showed significant changes (p <0.05), while the average change in micro hardness index based on the duration of applications were shown significant difference only in group C and D (p <0.05). The difference of time immersion in pear juice 100% for 30 and 60 minutes had no effect on tooth discoloration and micro hardness (p> 0.05).

It can be concluded that pear juice can be used as an alternative material for bleaching process without deteriorating it’s micro hardness after applied for 14 days.

Keywords: Pear Juices, Duration of Application, Immersion Time, Discoloration, Micro Hardness.