

## Penggunaan Pemutih Gigi Mengandung Hidrogen Peroksida 40% Dibanding dengan *Strawberry (Fragaria X ananassa)* terhadap Ketebalan Email, Kadar Kalsium, dan Kekuatan Tekan Gigi

Yuniarti,<sup>1</sup> Achadiyani,<sup>2</sup> Nani Murniati<sup>1</sup>  
<sup>1</sup>Universitas Islam Bandung, <sup>2</sup>Universitas Padjadjaran

### Abstrak

Estetik gigi adalah hal yang penting bagi seseorang. Salah satu hal yang memengaruhi estetik gigi adalah warna gigi. Perubahan warna gigi dapat diperbaiki dengan pemutihan gigi hidrogen peroksida 40% dan *strawberry (Fragaria x ananassa)*. Penelitian eksperimental laboratoris membandingkan gigi kelompok kontrol dengan dua kelompok perlakuan gigi yang diolesi bahan pemutih gigi hidrogen peroksida 40% atau direndam dalam *strawberry*. Penelitian dilakukan di Laboratorium Histologi Fakultas Kedokteran dan Laboratorium Kimia Universitas Padjadjaran, serta Laboratorium ITMKG Fakultas Kedokteran Gigi Universitas Padjadjaran periode Agustus 2012–Mei 2013. Kelompok masing-masing memakai sembilan buah gigi premolar permanen yang diukur ketebalan email secara mikroskopis, kadar kalsium memakai spektrofotometer, dan kekuatan tekan memakai *universal testing machine*. Uji statistik pengukuran ketebalan email adalah uji-t, pengukuran kadar kalsium memakai Wilcoxon dan Mann Whitney, sedangkan hasil pengukuran kekuatan gigi diuji dengan Kruskal Wallis dan *Post Hoc* Mann Whitney. Hasil uji penurunan ketebalan email kedua kelompok perlakuan dibandingkan dengan kontrol (uji *dependent t*,  $p=0,002$  dan  $p=0,0001$ ) dan perbedaan penurunan ketebalan email antara kedua kelompok (uji *independent*  $p=0,0375$ ) adalah signifikan. Penurunan kadar kalsium kedua kelompok dibandingkan dengan kontrol (uji Wilcoxon  $p=0,173$  dan  $p=0,441$ ) dan perbedaan kadar kalsium antara kedua kelompok tersebut (uji Mann Whitney  $p=0,480$ ) tidak signifikan. Uji kekuatan tekan gigi signifikan antara kontrol dan dua kelompok perlakuan (uji Kruskal Wallis  $p=0,014$ ), namun bila memakai uji *Post Hoc* Mann Whitney hanya penurunan kekuatan tekan gigi antara kontrol dan hidrogen peroksida yang berbeda signifikan ( $p=0,02$ ). Simpulan, hidrogen peroksida 40% menurunkan ketebalan email dan kekuatan tekan gigi lebih besar dibanding dengan *strawberry*, tetapi tidak menurunkan kadar kalsium lebih besar dibanding dengan *strawberry*.

**Kata kunci:** Hidrogen peroksida 40%, *strawberry (Fragaria x ananassa)*, ketebalan email, kadar kalsium gigi, kekuatan tekan gigi

## Teeth Bleaching Hydrogen Peroxide 40% Compared with Strawberry (*Fragaria X ananassa*) to Enamel Thickness, Calcium Level and Compressive Strength of Teeth

### Abstract

Teeth esthetics is important for someone. One thing influence teeth esthetics is colour. Dental bleaching using hydrogen peroxide 40% and strawberry (*Fragaria x ananassa*) is conservative alternative to restore the esthetics of either stained teeth. This study was an experimental laboratory by comparing control group with two treatment groups were teeth smeared hydrogen peroxide 40% or soaked in strawberry. This study was done in Histology Laboratory Faculty of Medicine and Chemical Laboratory Universitas Padjadjaran, and ITMKG Laboratory Faculty of Dentistry Universitas Padjadjaran period August 2012–May 2013. Each group used nine permanent premolars, which will be measured email thickness microscopically, calcium levels using spectrophotometer, and compressive strength using universal testing machine. The statistical test used for thickness measurement results email was the t-test, for measurement of calcium levels using Wilcoxon test and Mann Whitney while for tooth strength measurements were tested using Kruskal Wallis and Post Hoc Mann Whitney. The results obtained for the test email thickness reduction of both treatment groups compared with the control (test dependent t,  $p=0.002$  and  $p=0.0001$ ) and a decrease in the thickness difference between the two treatment groups email (independent test,  $p=0.0375$ ) were significant. The results of the impairment test calcium levels both treatment groups compared with controls (Wilcoxon  $p=0.173$  and  $p=0.441$ ), and the difference in calcium levels between the two groups (Mann Whitney test,  $p=0.480$ ) was not significant. The results of compressive strength test teeth showed significant gains between the control group and two treatment groups (Kruskal Wallis test,  $p=0.014$ ), However when using Post Hoc Mann Whitney test only decrease the compressive strength of the teeth between the control group and the treatment group were significant hydrogen peroxide ( $p=0.02$ ). In conclusions, 40% hydrogen peroxide causes a decrease in the thickness of the email and the compressive strength is greater than strawberry but do not cause a decrease in blood calcium level greater than strawberry.

**Key words:** 40% Hydrogen peroxide, strawberry, email thickness, teeth calcium levels, the compressive strength of teeth