

INTISARI

Banyak kalangan masyarakat merasa tidak puas terhadap penampilan giginya terutama karena pewarnaan pada gigi. Perawatan *bleaching* dapat mengurangi pewarnaan pada gigi, akan tetapi bahan *bleaching* komersial seperti karbamid peroksida dapat menyebabkan demineralisasi gigi. Oleh karena itu, dikembangkan suatu bahan *bleaching* yang lebih aman dengan efek samping minimal yaitu kombinasi asam malat 1% dan natrium bikarbonat 10%. Penelitian ini bertujuan untuk mengetahui adanya pengaruh kombinasi asam malat 1% dan natrium bikarbonat 10% sebagai bahan *bleaching* gigi.

Penelitian ini menggunakan 15 spesimen gigi premolar pertama rahang atas yang dibagi ke dalam 3 kelompok perlakuan, yaitu kelompok karbamid peroksida 10% sebagai kontrol positif, kelompok kombinasi asam malat 1% dan natrium bikarbonat 10%, dan kelompok asam malat 1% sebagai kontrol negatif. Spesimen gigi direndam pada larutan kopi lalu diberi aplikasi bahan *bleaching* dengan durasi 6 jam setiap hari selama 14 hari. Warna gigi diukur menggunakan chroma meter sebelum dan setelah perendaman kopi serta setelah aplikasi bahan *bleaching*. Perubahan warna gigi dihitung menggunakan rumus dE^*ab lalu dilakukan uji *One-Way ANOVA* dilanjutkan uji *Post-Hoc LSD* dengan derajat kepercayaan sebesar 95%.

Hasil penelitian menunjukkan terdapat perubahan warna gigi pada ketiga kelompok perlakuan. Hasil uji *One-Way ANOVA* menunjukkan terdapat pengaruh aplikasi bahan *bleaching* terhadap perubahan warna gigi ($p < 0.05$). Hasil uji *Post-Hoc LSD* menunjukkan terdapat signifikansi perbedaan rata-rata antarkelompok perlakuan. Kesimpulan yang didapat dari penelitian ini adalah terdapat pengaruh aplikasi bahan *bleaching* kombinasi asam malat 1% dan natrium bikarbonat 10% terhadap perubahan warna gigi.

Kata kunci: perubahan warna gigi, *bleaching*, karbamid peroksida, asam malat, natrium bikarbonat

ABSTRACT

Many people are dissatisfied with the appearance of their teeth, especially because of staining of the teeth. Bleaching treatments can reduce staining on teeth, but commercial bleaching materials such as carbamide peroxide can cause tooth demineralization. Therefore, a safer bleaching material with minimal side effects was developed, namely a combination of 1% malic acid and 10% sodium bicarbonate. This study aims to determine the influence of a combination of 1% malic acid and 10% sodium bicarbonate as a tooth bleaching material.

This study used 15 specimens of the first premolar teeth of maxilla which were divided into 3 treatment groups, namely the 10% carbamide peroxide group as a positive control, the 1% malic acid and 10% sodium bicarbonate combination group, and the 1% malic acid group as a negative control. Tooth specimens are soaked in a coffee solution and then given a bleaching application with a duration of 6 hours every day for 14 days. Tooth color is measured using a chroma meter before and after coffee immersion and after the application of bleaching material. The change in tooth color was calculated using the dE^*ab formula and then a One-Way ANOVA test was carried out followed by a Post-Hoc LSD test with a confidence degree of 95%.

The results showed that there was a change in tooth color in the three treatment groups. The results of the One-Way ANOVA test showed that there was an effect of bleaching material application on tooth discoloration ($p < 0.05$). The results of the Post-Hoc LSD test showed that there was a significant difference in mean between the treatment groups. The conclusion obtained from this study is that there is an effect of the application of 1% malic acid combined with 10% sodium bicarbonate as bleaching material on tooth discoloration.

Keywords: tooth color change, bleaching, carbamide peroxide, malic acid, natrium bicarbonate