

INTISARI

Degradasi pada semen ionomer kaca dapat terjadi secara kompleks akibat penyerapan air, pH rendah, erosi, dan pengunyahan. Salah satu akibat dari degradasi suatu material adalah terjadinya perubahan warna. Minuman berkarbonasi dan saliva terbukti menyebabkan perubahan warna pada semen ionomer kaca. Semakin lama paparan terhadap minuman berkarbonasi dan saliva, semakin besar pula perubahan warna yang terjadi. Bahan pelindung *nanofilled self-adhesive light cured resin* dinilai mampu melindungi semen ionomer kaca terhadap perubahan warna akibat kontaminasi saliva dan minuman berkarbonasi. Tujuan penelitian ini adalah untuk mengetahui pengaruh lama perendaman dalam minuman berkarbonasi dan saliva buatan terhadap perubahan warna semen ionomer kaca konvensional yang dilapisi bahan pelindung *nanofilled self-adhesive light cured resin*.

Tiga puluh dua diskus spesimen dibagi menjadi empat kelompok ($n=8$) dan dilakukan pengukuran warna dengan menggunakan *Chromameter* (dengan sistem CIEL*a*b) sebelum dan setelah perendaman dalam minuman berkarbonasi dan saliva buatan dengan lama waktu perendaman berbeda. Kelompok pertama direndam dalam minuman berkarbonasi selama 48 jam, kelompok kedua direndam dalam minuman berkarbonasi selama 96 jam, kelompok ketiga direndam dalam saliva buatan selama 48 jam, dan kelompok keempat direndam dalam saliva buatan selama 96 jam. Data hasil perhitungan perubahan warna (ΔE) dianalisis menggunakan uji ANAVA dua jalur dengan signifikansi 95% ($\alpha = 0,05$) dan Uji *Pos-hoc LSD*.

Hasil uji ANAVA dua jalur menunjukkan bahwa (1) terdapat perbedaan yang bermakna antara perubahan warna SIK dengan pelindung *nanofilled self-adhesive light cured resin* yang direndam dalam minuman berkarbonasi dan direndam dalam saliva buatan; (2) terdapat perbedaan yang bermakna antara perubahan warna SIK dengan pelindung *nanofilled self-adhesive light cured resin* yang direndam dengan lama waktu perendaman 48 jam dan 96 jam; dan (3) terdapat interaksi yang signifikan antara media yang digunakan sebagai perendam dengan lama waktu perendaman.

Kata kunci: Semen ionomer kaca konvensional, minuman berkarbonasi, perubahan warna, bahan pelindung *nanofilled self-adhesive light cured resin*

ABSTRACT

Degradation of conventional glass ionomer cement (GIC) can be caused by water sorption, low pH, erosion, and wear. One of consequences that might result from material degradation is discoloration. Carbonated drinks and artificial saliva were reported induce color alteration of glass ionomer cement. Increased duration of carbonated drinks and saliva exposure may lead to increase discoloration of glass ionomer cement. Nanofilled self-adhesive light cured resin protective coating accounts for protecting glass ionomer cement from discoloration due to acid attack from carbonated drinks and saliva contamination. The aim of this study was to know the effect of duration of immersion in carbonated drinks and artificial saliva on color change of conventional glass ionomer cement coated with nanofilled self-adhesive light cured resin.

Thirty two disk of specimens are divided into four groups (n=8) and color parameters (according to CIEL*a*b* system) were measured using *Chromameter* before and after immersion in carbonated drinks and artificial saliva with different immersion time. The first group was immersed in carbonated drinks for 48 hours, second group was immersed in carbonated drinks for 96 hours, third group was immersed in artificial saliva for 48 hours, and fourth group was immersed in artificial saliva for 96 hours. All data of color measurement was analyzed by Two-ways ANOVA with 95 % confidence level ($\alpha = 0,05$) and Post-hoc LSD.

Two-ways ANOVA Test showed: (1) a significant difference ($p < 0,05$) of color alteration between conventional GIC coated with nanofilled self-adhesive light cured resin immersed in carbonated drinks and conventional GIC coated with nanofilled self-adhesive light cured resin immersed in artificial saliva, (2) a significant difference ($p < 0,05$) of color alteration conventional GIC coated with nanofilled self-adhesive light cured resin immersed with different duration of immersion time, i.e 48 hours and 96 hours, (3) a significant interaction between immersion media and duration time of immersion.

Keywords: Conventional glass ionomer cement, carbonated drink, color change, nanofilled self-adhesive light cured resin protective coating