

INTISARI

Resin komposit nanofil merupakan bahan restorasi gigi dengan partikel bahan pengisi berukuran 0,005-0,01 μm . Minuman berkarbonasi memiliki variasi pH asam yang dapat menyebabkan kekasaran permukaan restorasi sehingga memicu terjadinya perlekatan *Candida albicans*. Tujuan penelitian ini adalah untuk mengetahui pengaruh pH minuman berkarbonasi terhadap jumlah koloni *Candida albicans* yang melekat pada resin komposit nanofil.

Bahan yang digunakan yaitu resin komposit nanofil Filtext Z350XT (3M ESPE, Jerman), minuman berkarbonasi pH 2,35; 3,25; akuades steril pH 7,0, saliva steril, dan suspensi *Candida albicans*. Dua belas sampel resin komposit berukuran \varnothing 5mm, tebal 2mm dibagi menjadi tiga kelompok perlakuan ($n=4$), kemudian direndam dalam minuman berkarbonasi dan akuades steril selama 5 hari, suhu 37°C. Sampel diambil lalu direndam dalam saliva steril selama 1 jam, suhu 37°C. Sampel diinkubasi dalam suspensi *Candida albicans* selama 1 jam, suhu 37°C. Sampel lalu divortex mixer dalam NaCl 0,9%. Sebanyak 0,1 mL larutan diinokulasikan pada cawan petri lalu diinkubasi selama 48 jam, suhu 37°C. Jumlah koloni *Candida albicans* dihitung menggunakan *colony counter*. Data dianalisis menggunakan uji *One-way ANOVA* ($\alpha=0,05$).

Rerata koloni *Candida albicans* yang melekat pada resin komposit nanofil pada kelompok pH 2,35 sebesar 22.025 ± 1.226 CFU/mL, pH 3,25 sebesar 20.250 ± 1.237 CFU/mL, dan kontrol pH 7,0 sebesar 19.475 ± 1.305 CFU/mL. Hasil *One-way ANOVA* menunjukkan terdapat pengaruh yang bermakna pada pH minuman berkarbonasi terhadap jumlah koloni *Candida albicans* yang melekat pada resin komposit nanofil ($p < 0,05$). Uji LSD menunjukkan adanya perbedaan yang signifikan pada kelompok pH 2,35 dan pH 7,0. Kesimpulan penelitian ini adalah pH minuman berkarbonasi yang rendah meningkatkan jumlah koloni *Candida albicans* yang melekat pada resin komposit nanofil.

Kata kunci : resin komposit nanofil, pH minuman ringan berkarbonasi, perlekatan *Candida albicans*

ABSTRACT

Nanofiller composite resin is a dental restoration with the filler particle size of 0.005-0.01 μm . Carbonated drink is a beverage that has acidic pH which cause roughness to the restoration so that it trigger *Candida albicans* adherence. This research was aimed to determine the influence of carbonated drinks pH on the adherence of *Candida albicans* to the nanofiller composite resin.

The materials used were nanofiller composite resin Filtex Z350XT (3M ESPE, Jerman), carbonated drinks with pH 2.35, 3.25, sterile water pH 7.0, sterile saliva, and *Candida albicans* suspension. Twelve composite resin samples with \emptyset 5mm, width 2mm were divided into three groups (n=4), and then each sample was soaked in carbonated drinks and sterile water for 5 days at 37°C. Samples were taken and then soaked in sterile saliva for 1 hour at 37°C. Samples were incubated in *Candida albicans* suspension for 1 hour at 37°C. Samples were inserted in NaCl 0.9%, then vortex mixer. After that, 0.1 mL of solution was inoculated in petri dish and then incubated for 48 hours at 37°C. *Candida albicans* colonies were counted using colony counter. Data were analyzed using One-way ANOVA ($\alpha=0.05$).

The mean number of *Candida albicans* colonies were adherenced to the nanofiller composite resin at pH 2.35, 3.25, and 7.0 were $22,025 \pm 1,226$ CFU/mL; $20,250 \pm 1,237$ CFU/mL; and $19,475 \pm 1,305$ CFU/mL respectively. The result of One-way ANOVA was that there is a significant influence on carbonated drinks pH variation on the adherence of *Candida albicans* to the nanofiller composite resin ($p < 0.05$). LSD test showed that there is a significant difference between pH 2.35 and 7.0. The conclusion of this research was that low carbonated drinks pH increased the adherence of *Candida albicans* to the nanofiller composite resin.

Keywords : nanofiller composite resin, carbonated drinks pH, *Candida albicans* adherence