Pengaruh penyikatan pasta gigi charcoal terhadap kekerasan permukaan semen ionomer kaca modifikasi resin = The influence of charcoal toothpaste brushing on resin modified glass ionomer cement surface hardness

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Abstrak

Tujuan: Penelitian ini bertujuan untuk mengetahui pengaruh penyikatan dengan dan tanpa pasta gigi charcoal terhadap kekerasan permukaan material restorasi semen ionomer kaca modifikasi resin. Metode penelitian: Dalam penelitian ini digunakan semen ionomer kaca modifikasi resin Fuji II LC. Sejumlah 24 spesimen berbentuk silinder dengan ukuran diameter 6 mm dan tebal 2 mm yang dipolimerisasi dengan menggunakan LED light cured LEDMAX-Hilux selama 20 detik dengan irradiansi 800 mW/cm2. Setelah polimerisasi, spesimen direndam dalam akuades pada suhu 37C selama 24 jam. Spesimen diukur kekerasan permukaan awal dengan dengan Knoop Microhardness tester Shimatzu HMV-G21 DT yang diindentasikan dengan beban 50 gf selama 15 detik. Selanjutnya, specimen dibagi menjadi tiga kelompok (n=8) dengan perlakuan penyikatan dengan akuades, pasta gigi tanpa charcoal Colgate Total Professional Clean®, dan pasta gigi dengan charcoal Colgate Total Charcoal Deep Clean® selama 4 menit 40 detik setara satu bulan penyikatan dengan beban 150 gram menggunakan Oral-B DB4010 Advance Power Battery Toothbrush. Spesimen kemudian dibersihkan dengan ultrasonic cleaner selama 20 detik dan diuji kekerasan permukaan akhir. Data dianalisis menggunakan uji One Way Anova untuk menilai perbedaan kekerasan permukaan antara kelompok penyikatan. Hasil: Semen ionomer kaca modifikasi resin yang diberikan penyikatan dengan akuades, pasta gigi tanpa charcoal, dan pasta gigi charcoal menunjukkan peningkatan kekerasan permukaan yang signifikan antar kelompok (p<0,5). Peningkatan kekerasan permukaan paling tinggi terjadi pada penyikatan dengan pasta gigi charcoal. Kesimpulan: Semen ionomer kaca modifikasi resin setelah penyikatan menggunakan pasta gigi yang mengandung charcoal memiliki kekerasan permukaan yang lebih tinggi dibandingkan pasta gigi yang tidak mengandung charcoal

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water (group A), toothpaste without charcoal Colgate Total Professional Clean® (group B), and toothpaste with charcoal Colgate Total Charcoal Deep Clean® (group C) for four minutes and 40 seconds (equivalent to a month brushing) using Oral-B DB4010 Advance Power Battery Toothbrush with a load of 150 gr. Specimens were cleaned with ultrasonic cleaner in 20 seconds and were measured for final surface hardness. Data were anylized using One Way Anova to assess the significant differences between brushed groups. Result: The value of surface hardness of resin modified glass ionomer cement specimens were increased significantly between groups ($p<0,05$). The enhancement of surface hardness value of charcoal toothpaste was highest between brushed groups. Conclusion: It was concluded that resin modified glass ionomer cement specimens after brushed with charcoal toothpaste have a higher surface hardness than toothpaste without charcoal