Compositi: le novità dalla letteratura scientifica


Effect of whitening toothpaste on superficial roughness of composite resin

Natalia Ventura da Cas, DDS Gabrielle Rodrigues Ruat, DDS, MS Renata Pla Rizzolo Bueno, DDS, MS Raquel Pachaly, DDS, MS, Rose-Jaine Terezinha Pozzobon, DDS, MS, PhD.

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A simulated brushing machine was used for all groups, providing horizontal back and forth movement with an amplitude of 3.8 cm applying an axial load of 200 g and a speed of 356 rpm, totaling 20,000 cycles. To determine the Ra in each specimen, 6 readings were taken at various positions before and after brushing.

The results were submitted to variance analyses and Tukey’s test (P < 0.05). Groups 1, 2, 3, and 5 demonstrated statistically significant differences between initial and final averages. Based on these results, it was determined that brushing with toothpaste, regardless of formulation, significantly increased the Ra of the resin composite evaluated in this study.

Effect of different adhesives combined with two resin composite cements on shear bond strength to polymeric CAD/CAM materials

Nora BÄHR1, Christine KEUL1, Daniel EDELHOFF1, Marlis EICHBERGER1, Malgorzata ROOS2, Wolfgang GERNET1 and Bogna STAWARCZYK1

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This study tested the impact of different adhesives and resin composite cements on shear bond strength (SBS) to polymethyl methacrylate (PMMA) - and composite-based CAD/CAM materials. SBS specimens were fabricated and divided into five main groups (n=30/group) subject to conditioning: 1. Monobond Plus/Heliobond (MH), 2. Visio.link (VL), 3. Ambarino P60 (AM), 4. exp. VP connect (VP), and 5. no conditioning-control group (CG). All cemented specimens using a. Clearfil SA Cement and b. Variolink II were stored in distilled water for 24 h at 37°C. Additionally, one half of the specimens were thermocycled for 5,000 cycles (5°C/55°C, dwell time 20 s). SBS was measured; data were analyzed using descriptive statistics, four- and one-way ANOVA, unpaired two-sample t-test and Chi2-test. CAD/CAM materials without additional adhesives showed no bond to resin composite cements. Highest SBS showed VL with Variolink II on composite-based material, before and after thermocycling.
Background. Knowing which factors influence restoration longevity can help clinicians make sound treatment decisions. The authors analyzed data from The National Dental Practice-Based Research Network to identify predictors of early failures of amalgam and resin-based composite (RBC) restorations.

Methods. In this prospective cohort study, the authors gathered information from clinicians and offices participating in the network. Clinicians completed a baseline data collection form at the time of restoration placement and annually thereafter. Data collected included patient factors, practice factors and dentist factors, and the authors analyzed them by using mixed-model logistic regression.

Results. A total of 226 practitioners followed up 6,218 direct restorations in 3,855 patients; 386 restorations failed (6.2 percent) during the mean (standard deviation) follow-up of 23.7 (8.8) months. The number of tooth surfaces restored at baseline helped predict subsequent restoration failure; restorations with four or more restored surfaces were more than four times more likely to fail. Restorative material was not associated significantly with longevity; neither was tooth type. Older patient age was associated highly with failure (P < .001). The failure rate for children was 4 percent, compared with 10 percent for people 65 years or older. Dentist’s sex and practice workload were associated significantly with restoration longevity.

Conclusions. In this prospective cohort study, these factors were significantly predictive of failure for amalgam and RBC restorations: patient’s age, a higher number of surfaces restored at baseline, the dentist’s sex and the practice workload. Material choice was not significantly predictive in these early results.

Practical Implications. If clinicians can recognize and identify the risk factors associated with early restoration failure, more effective treatment plans may be offered to the patient.