

IADR Abstract Archives

Behavior of Two Resin Composites after Aging in Drink Solutions

Objectives: The aim of this study was to investigate the effects of artificial saliva and drink solutions on colorimetric variations and wear resistance of 2 composites: Herculite XRV Ultra (HXRVU) and Harmonize (HZ) (Kavo-Kerr), after one month aging

Methods: Forty composite specimens were prepared in an oxygen-free environment and polymerized. Four specimens were immediately investigated (T0), while thirty-six specimens were soaked into different drink solutions (artificial saliva, cola, ethanol), sealed into PET bottles incubated at 37°C. Control specimens were kept in air. Specimens evaluation was made at T0, after 1 week (T1) and 1 month (T2). Twenty-five samples (12 HXRVU, 12 HZ) were analyzed using a spectrophotometer to assay three color-identifying values: *L*, *a* and *b*. To evaluate wear resistance, the remaining sixteen samples (8 HXRVU, 8 HZ) were fitted into a rotary tribometer, placed into a food-like bolus-simulating slurr and wear rate was evaluated with a profilometer.

Results: *L* values for all specimens of both groups did not show differences between T0 and T2. All *a* values showed an increase compared to control group. *b* values for HXRVU specimens did not show differences between T0 and T2, whereas *b* values for HZ specimens decreased, compared to control group. HXRVU specimens were more wear resistant than HZ group at T0 and seemed to be less susceptible to modifications in different drink solutions. Ethanol solution produced a marked increase of wear rate in HZ specimens at T2.

Conclusions: Aging effects on chromatic variations of composites placed into different drink solutions were demonstrated only for *a* value, resulting in a slightly change into red color. Wear rate was composite related. Additional in vivo testing is needed to clarify the clinical behavior of the tested composite materials in terms of color changes and wear rate

Division: IADR/AADR/CADR General Session

Meeting: 2020 IADR/AADR/CADR General Session (Washington, D.C., USA)

Location: Washington, D.C., USA

Year: 2020

Final Presentation ID: 0769

Authors

- Generali, Luigi (University of Modena and Reggio Emilia , Modena , Italy)
- Vignudini, Giorgia (University of Modena and Reggio Emilia , Modena , Italy)
- Maravic, Tatjana (University of Bologna , Bologna , Italy)
- Puddu, Pietro (University of Modena and Reggio Emilia, Modena, Italy , Modena , Italy)
- Bolelli, Giovanni (University of Modena and Reggio Emilia, Modena, Italy , Modena , Italy)
- Lusvarghi, Luca (University of Modena and Reggio Emilia, Modena, Italy , Modena , Italy)
- Breschi, Lorenzo (University of Bologna , Bologna , Italy)
- Consolo, Ugo (University of Modena and Reggio Emilia , Modena , Italy)
- **Cecchi, Vittorio** (University of Modena and Reggio Emilia , Modena , Italy)

Financial Interest Disclosure: NONE

SESSION INFORMATION

Poster Session

Antimicrobial & Regenerative Therapeutics in Dentistry