397 Linear-Dimensional Stability of Hydrocolloid Impressions after Storage and Double-Pouring

Thursday, June 21, 2012: 9 a.m. - 10:15 a.m.
Location: Poster Hall (Convention Center)
Presentation Type: Poster Session

***A.P.B. SAMRA**, S.C.L. PEDRINI, D.E.A. ANSELMO, and V.M. URBAN, Dentistry, Ponta Grossa State University, Ponta Grossa, Brazil*

Objective: This study evaluated the dimensional changes of stone casts obtained from three brands of alginates: Cavex ColorChange (CaCC, Cavex), Hydrogum 5 (HY5, Zhermack) and Jeltrate Plus (JelP, Dentsply Caulk), after different conditions.

Method: A metallic master model consisting of a plate with two cylindrical abutments was used to produce stone casts and to serve as a control. Impressions (n=5) were taken from the master model using each alginate and were then stored at room temperature and 100% relative humidity until pouring. Casts were fabricated in Type IV gypsum immediately after impression and after 1h, 1- and 5-day storage. All impressions were repoured after each gypsum crystallization. The distance between the abutments was measured three times by the same operator with a digital caliper. Mean values (µm) were analyzed using 3-way ANOVA and Tukey-Kramer test (α=0.05).

Result: Regardless of pouring, JelP impressions at initial time resulted in casts with higher abutment' distance than the control ($p=0.0008$). CaCC and HY5 groups showed significant lower values compared with the control only at 5-day storage ($p<0.0019$). In addition, CaCC groups with storage no longer than one day showed no significant difference in the distance compared with values obtained immediately after impression. Within HY5 group, all storage periods resulted in no significant changes compared with initial measurements. JelP groups after 24h demonstrated significantly lower width than its initial values ($p<0.001$). Regardless of storage times, CaCC and HY5 groups from the second pouring showed no significant difference compared with those from the first pouring. Repoured dies from JelP impressions demonstrated higher values than their poured ones ($p=0.0005$).

Conclusion: CaCC and HY5 impressions can be poured and repoured within 24h with no significant change, while JelP impressions should be stored and poured only after 1h. Impressions from these materials should not be used after 5-day storage.

Keywords: Biophysics, Dental materials, Evaluation, Impression materials and Prosthodontics

See more of: Other Materials - Chemistry, Properties, and Performance
See more of: Dental Materials 9: Other Materials - Chemistry, Properties and Performance

<< Previous Abstract | Next Abstract >>