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### Abstract

[LOPES, Célia Maria Condeixa de França](#); [SCHUBERT, Edward Werner](#); [REIS, Alessandra](#) and [WAMBIER, Denise Stadler](#). **Analysis of the hardness of a new restorative material for ART: Glass Carbomer.** *Rev. odontol. UNESP* [online]. 2016, vol.45, n.2, pp.65-70. Epub Jan 26, 2016. ISSN 0101-1774. <http://dx.doi.org/10.1590/1807-2577.10915>.

### Objective

This study evaluated the microhardness of two encapsulated ionomer materials – Glass Carbomer (GC-GCP Dental) and Riva Light Cure (RL-SDI) in combination with four light curing units (Carbo LED lamp, GCP-Dental, Demi LED curing light, Kerr, Poli Wireless, Kavo, Radii Plus, SDI).

### Material and method

Eighty specimens were prepared following the manufacturer's guidelines, 40 for each ionomer material and for 10 specimens, one light curing unit was used. After 7 days of storage in distilled water and at room temperature, 80 specimens were tested with the Vickers hardness (microhardness HMV 2T, Shimadzu, Japan). Five indentations were performed on each specimen (center, right, left, top and bottom). The test was carried out under a load of 100 g, with a 10 second penetration time.

### Result

Independent of the curing unit the Riva Light Cure (RL-SDI) obtained the lower hardness than the material Glass Carbomer (GC-GCP-Dental). The microhardness of Glass Carbomer (GC-GCP-Dental) was influenced by the type of curing unit used as a heat treatment. The analysis of variance and Tukey test ( $p < 0.05$ ) showed that the interaction of factors material vs. curing unit ( $p < 0.001$ ), the main factor material ( $p < 0.001$ ) and curing unit ( $p = 0.002$ ) were statistically significant.

### Conclusion

The ionomeric material Glass Carbomer (GCP-Dental) had significantly higher hardness value when compared with glass ionomer modified by resin Riva Light Cure (SDI), regardless of the light curing unit used.

**Keywords :** Glass ionomer cements; dental materials; hardness tests; curing lights dental.

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