18-month clinical evaluation of a copper-containing universal adhesive in non-carious cervical lesions: A double-blind, randomized controlled trial

Matos T.P.
Gutiérrez M.F.
Hanzen T.A.
Malaquias P.
de Paula A.M.
de Souza J.J.
Hass V.
Fernández E.
Reis A.
Loguercio A.D.

Objective: This study aimed to evaluate the addition of copper nanoparticles (CuNp) on the clinical performance of a universal adhesive system used as etch-and-rinse (ER) and self-etch (SE).

Methods: 216 restorations were randomly placed in 36 subjects according to the following groups: ERcu = etch-and-rinse with 0.1% CuNp; ERct = etch-and-rinse without CuNp; SEcu = self-etch with 0.1% CuNp; SEct = self-etch without CuNp. Resin composite was placed incrementally and light-cured. The restorations were evaluated at baseline and 6, 12 and 18 months using the FDI and USPHS criteria. Statistical analyses were performed using appropriate tests (? = 0.05). Results: The addition of CuNp did not increase the clinical performance (FDI / USPHS) of the universal adhesive tested after 18-month when applied in the ER mode (p > 0.05). The addition of CuNp in SE restorations increased the retention rate significantly and decreased the marginal discrepancies after 18 months (p < 0.05). Conclusion: The clinical performance of universal adhesive was significantly increased when applied in the SE mode with the addition of copper nanoparticles.

Clinical relevance: This is the first study that demonstrates a slight improvement in the clinical performance of universal adhesive systems in non-carious cervical lesions when added CuNp in
Dental Restoration, Permanent

Dentin-Bonding Agents

Double-Blind Method

Humans

Resin Cements

Tooth Cervix