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Title: Comparison of one component universal adhesive's infiltration depth into natural enamel lesions after air drying vs 96% ethanol

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Aim: Comparing the effect of two different drying procedures on the infiltration depth of a self etch bonding agent into natural caries lesions.

Materials and methods: 8 extracted human teeth with non-cavitated interproximal lesions. Samples were cut vertically to obtain two symmetrical lesions, (n=16). After isolating the cut surfaces by nail varnish, a metallic strips was used to remove the outer hypermineralized layer of the lesion. After etching for 2min with 37% orthophosphoric acid and thoroughly rinsing the surface, lesions of Gr.1 were air-dried for 30s. In Gr.2 lesion surfaces were air-dried for 10s, followed by application of 96% ethanol for 30s and air-dried for another 10s. Scotchbond Universal (3M ESPE,USA) was subsequently applied and left for infiltration for 3 min. Excess was removed before light curing for 40s, then a thin layer of flowable composite (Tetric flow, Vivadent) was applied and light cured for 20s. Samples were bleached using 30% H2O2 for 12h @ 37°C and then re-stained with sodium fluorescein solution. Thin cuts of the teeth were observed with confocal microscopy (CLSM, Leica SP5-2P) and computer image analysis was performed (ImageJ, NIH, USA). The percentage of infiltration was than calculated as area of resin infiltration (red)/area of total demineralization (green) x100.

Results: Average penetration for (Gr.1) was 30.2%(SD13.4) while (Gr.2) was 27.45%(SD 13.3), Statistical analysis (t-test) showed no significant difference between the two groups (p=0,653).

Conclusion: Penetration depth of a one component universal adhesive system was not significantly different after pretreatment of initial caries lesions with compressed air and with 96% ethanol, respectively.

Biography

Marwa Abdelaziz Is graduated from the University of Geneva in 2010 and she has been working simultaneously in a private practice as a general dentist and at the University of Geneva (Division of cariology, endodontlogy and pediatric dentistry) teaching students and conducting research. In 2013 at the age of 29 years she started a PhD Project supervised by the University of Amsterdam (ACTA) and the University of Geneva, the subject of the research is focused on non-invasive diagnostic methods and non-invasive treatment options of initial carious lesions like infiltration and sealing.

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