Shear strength of orthodontic bracket bonding with GIC bonding agent after the application of CPP-ACPF paste

Abstrak:

Background: White spot lesion is a major problem during fixed orthodontic treatment. This problem can be solved by minimizing white spot lesion before the treatment and using a fluorida-releasing bonding agent. The application of CPP-ACPF paste as remineralization agent before treatment and GIC as orthodontic bonding agent is expected to overcome this problem as well as to strengthen GIC bonding strength.

Purpose: To measure the shear strength of CPP-ACPF pretreatment to GIC orthodontic bonding agent.

Methods: In this study, 50 adult human premolars were randomly divided into 2 groups: group I as treatment group and group II as control group that was not given CPP-ACPF pretreatment. After having been cut and put into acrylic device, the samples in group I were given pretreatment with CPP-ACPF paste on enamel surface for 2 minutes twice a day as instructed in product label for 14 days. Orthodontic brackets were bonded with GIC bonding agent on all samples in both groups as instructed in product label. Then, the shear strength was measured by Autograph Shimatzu with crosshead speed 0.5 mm/minute. The data was analyzed with Independent t-test. Results: The mean shear bond strength in treatment group was 19.22 ± 4.04 MPa and that in control group was 12.97 ± 3.97 MPa. Independent t-test analysis showed that there was a significant difference between treatment and control group (p>0.05). Conclusion: CPP-ACPF pretreatment can increase GIC orthodontic bonding shear strength.

Keyword:

Daftar Pustaka:

Brantley WA Orthodontic materials: Scientific and clinical aspects Thieme 2001 Stuttgart