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Can intra-coronally bleached teeth be bonded safely after antioxidant treatment?

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Abstract:
The aim of this study was to compare the effects of antioxidant treatment and delayed bonding, following intra-coronal bleaching, on the shear bond strength (SBS) and bond failure site of brackets bonded to enamel. Eighty mandibular incisors were divided into four equal groups. After root canal filling, specimens in Group 1 were used as control and not bleached. For experimental groups 2 to 4, bleaching agent was placed into the rest of the cavity for a four-day period and this bleaching treatment was performed two times. In Group 2, specimens were bonded immediately after bleaching; in Group 3, specimens were bleached and then immersed in artificial saliva for 30 days before bonding; in Group 4, specimens were bleached, treated with an antioxidant agent, and then bonded. The SBS values of bonded brackets were measured in megapascal (MPa), while adhesive remnant index (ARI) scores were determined after the brackets failed. The SBS values of Group 1 (mean: 20.3±7.1 MPa) and Group 4 (mean: 18.2±6.1 MPa) were significantly higher (p>0.001) than those of Group 2 (mean: 4.9±3.2 MPa) and Group 3 (mean: 8.7±4.9 MPa). No significant differences in SBS were found between Groups 1 and 4, and between Groups 2 and 3.

Key words:

Intra-coronal bleaching, Antioxidant, Bonding

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