

Original Article

Influence of different types of mouthwashes on force decay of elastomeric chain recommended in SARS-COV-2 pandemic

Abstract:

OBJECTIVES: This study aimed to compare the force decay of the power-chain elastics after exposure to anti-coronavirus 2019 (COVID-19) antiseptic mouthwashes at different intervals.

METHODS: A total of 300 power-chain pieces were used from American Orthodontics (AO) and Dentaaurum (D) brands. Each piece composed of five loops that were selected to simulate canine retraction distally. The samples were randomly grouped according to immersion in the tested mouthwashes 0.2% povidone-iodine (PVP-I), 1% hydrogen peroxide (H₂O₂), and 0.2% chlorhexidine (CHX) and cetylpyridinium chloride (CPC). The maximum tensile load failure testing (MTLT) was assessed at six time points (zero, one hour, 24 hours, 1, 2 and 4 weeks). Analysis of variance (ANOVA) and Tukey's *post hoc* tests were used to analyse the data, where $P < 0.05$.

RESULTS: Significant differences in MTLT of power-chain elastics used at different immersion intervals were observed. MTLT, in each tested group, decreased significantly as the immersion time increased with significant differences among the tested mouthwashes at each time point. H₂O₂ group displays a maximum force decay throughout the time intervals for both brands, in contrast to CPC group, which shows less degradation over time.

CONCLUSION: Both brands are decade over time during exposure to the tested mouthwashes. CPC mouthwashes is a good option to be described for orthodontic patient during COVID-19 pandemic, whereas H₂O₂ mouthwashes should be avoided.