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Abstract

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This study aimed to assess the capacity of a sodium hypochlorite and citric acid (CA) association (the latter at different concentrations) in removing coronal smear layer (SL) of primary teeth. For this purpose, the pulp chamber roof and floor of 28 primary molars were removed to obtain enamel and dentine disks. SL was produced on the internal walls of the disks using high-speed drills. The disks were irrigated with 1% sodium hypochlorite and citric acid at different concentrations (CA-4%, CA-6%, CA-8% and CA-10%), and with 0.9% sodium chloride. The samples were split and observed under SEM. Scores were attributed to the obtained photomicrographs, according to the amount of SL present. It was noted that all the tested concentrations of citric acid used after the sodium hypochlorite were capable of removing SL. The results were analyzed by the Kruskal-Wallis test, and there was no significant statistical difference among the scores of the groups tested. However, it was observed that CA-8% and CA-10% caused peritubular dentine destruction, and that CA-4% presented a larger number of samples with dense SL. Based on these results, 6.0% citric acid in association with 1% sodium hypochlorite is suggested as auxiliary chemical substances for primary teeth irrigation.

Keywords : Tooth; deciduous; Citric acid; Sodium hypochlorite; Endodontics; Smear layer.

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