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Research Article

The Effect of Zamzam Water and ProShield^R Varnish on Microhardness of Eroded Primary Enamel Teeth Induced by Iron^{plus} Syrup: An *In Vitro* Study

ABSTRACT:

Background: The objective of the current study was to evaluate the erosive adverse effect of paediatric Ironplus syrup and the remineralization effectualness of Zamzam Water and ProShieldR Varnish on microhardness of primary teeth. **Materials and method:** Forty primary anterior teeth were randomly distributed into five groups, each group has eight samples (N=8) assigned as: group1: control negative, group2: control positive, group3: 5% Sodium Fluoride Varnish, group4: Zamzam water and group5: Zamzam water and 5% Sodium Fluoride Varnish. Excluding the control negative group from them, all samples were immersed in 100ml of Ironplus syrup and agitated for 2 min once a day for 14 days. Then those groups were treated with remineralizing agents of: 5% Sodium Fluoride Varnish for 24 hours, Zamzam water for 30 min every 12 h for 12 days and the combination therapy initiated by Zamzam water then after 30 min, 5% Sodium Fluoride Varnish was applied for 24hrs. Vickers Microhardness test and Polarized Light Microscope were two adopted tests that this study dependent upon. **Results:** There was a statistically significant difference in microhardness mean values when making a comparison between the baseline and Ironplus tested groups, furthermore ANOVA and Duncan's Multiple Range test showed that there was a highly significant statistical difference in microhardness mean values among baseline, demineralization and remineralization groups at P-Value ≤ 0.01 . **Conclusion:** The surface microhardness of the primary enamel was reduced owing to the potential erosive efficacy of the used paediatric pharmaceutical preparations. On the other extreme, the previous readings had increased after being treated with remineralizing agents meaning that they have the capacity to battle against erosive potential reaching its highest capability in terms of remineralization with the combination treatment group.