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A randomized controlled trial by the 3DS for dental caries

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Abstract The aim of this study is to evaluate the povidone-iodine for the suppression of oral cariogenic bacteria and compare its effects to that of fluoride in children. We carried out a randomized controlled trial to compare the effects of povidone-iodine to those for sodium fluoride. Pre-school children (n = 210) with more than 10⁵ cfu/ml mutans streptococci in their stimulated saliva were randomly sampled and randomly allocated into three groups. We planned the preventive program by 3DS (Dental Drag Delivery System). The groups that provided preventive programs were the povidone-iodine group (n = 70) and the sodium fluoride group (n = 70). A control group (n = 70) received no intervention. Povidone-iodine or sodium fluoride was applied to the tooth surface using custom made trays. Subsequent home care was obligatory for one month. After one month, the salivary levels of mutans streptococci were low level when compared to the based data. However the difference in salivary levels of mutans streptococci among groups was not statistically significant when comparing the povidone-iodine group with the sodium fluoride group ($P = 0.625$). After 2.5 years follow up, differences in incidence of new dental caries among the three groups were not statistically significant ($P = 0.583$). Clinical application of anti-microbial drugs may be effective, but only a single intervention is not sufficient to reduce the

incidence of new dental caries.

Key words Anti-microbial drugs, Dental drug delivery system, Incidence of dental caries, Mutans streptococci, Randomized controlled trial

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