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Efficacy of an experimental propylene glycol-based, water-free caries detecting dye in comparison with Snoop® using histological analysis

Parastoo Iranparvar

Assistant Professor, Dept. of Pediatric Dentistry, Shahid Beheshti University of Medical Sciences, Tehran

Kasra Tabari

Assistant Professor, Dept. of Restorative Dentistry, Shahid Beheshti University of Medical Sciences, Tehran

Anahita Shahi

Assistant Professor, Dept. of Periodontics, Semnan University of Medical Sciences, Semnan

DOI: <https://doi.org/10.3329/bjms.v17i2.35874>

Keywords: Dental caries, Caries-detectordye, Histology

Abstract

Background and Aim: One limitation of caries disclosing dyes is the risk of sound dentin removal. This study sought to assess the efficacy of a newly developed experimental caries disclosing dye in complete removal of infected dentin and its properties in comparison with Snoop caries detecting dye using histological analysis.

Materials and Methods: A caries detecting dye with improved properties was experimentally prepared. Twenty permanent teeth with occlusal caries were selected and divided into two groups of staining

with the experimental dye (group 1) and Snoop caries detecting dye (group 2). Stained carious dentin was removed and the process of staining and caries removal was repeated until no staining was observed. DIAGNOdent laser caries detection aid was used in all cavities to ensure absence of caries. After decalcification, 5 sections were made of each tooth, Gram-stained and subjected to histological analysis. Presence of bacteria in the two groups following staining with the experimental and Snoop dyes was evaluated and statistically analyzed using Fisher's exact test.

Results: In the Snoop group, bacteria were present in 3 out of 50 (6.0%) specimens. In the experimental group, bacteria were found in 2 out of 60 specimens (4.0%). Fisher's exact test showed no significant difference in this respect between the two groups.

Conclusion: Histological analysis revealed similar efficacy of Snoop and the experimental caries detecting dyes in terms of complete elimination of infected dentin. Considering the improved properties of the experimental caries detecting dye, it may have superior efficacy in preventing unnecessary removal of sound dentin.

Bangladesh Journal of Medical Science Vol.17(2) 2018 p.218-223

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Author Biography

Parastoo Iranparvar, Assistant Professor, Dept. of Pediatric Dentistry, Shahid Beheshti University of Medical Sciences, Tehran

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Published
2018-03-23

How to Cite

Iranparvar, P., Tabari, K., & Shahi, A. (2018). Efficacy of an experimental propylene glycol-based, water-free caries detecting dye in comparison with Snoop® using histological analysis. *Bangladesh Journal of Medical Science*, 17(2), 218-223.
<https://doi.org/10.3329/bjms.v17i2.35874>

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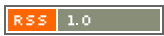
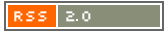


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Bangladesh Journal of Medical Science
ISSN 2223-4721 eISSN 2076-0299