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In vitro* comparison of microleakage of two hydrophilic and hydrophobic fissure sealants*Faraneh Abdolhoseinpour, Ali Rashidian, Mahsa Mohammad zadeh and Farzaneh Aghajani**
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Introduction & Aim: Fissure sealant therapy is among the most effective methods of preventing dental caries. However, the duration and isolation tooth are difficult in this procedure especially in young children. Using new hydrophilic fissure sealants may reduce such problems. This experimental study aimed to evaluate microleakage and penetration depth of a hydrophilic fissure sealant among conventional fissure sealant.

Materials & Methods: In this *in vitro* study, 54 extracted premolars with no decay, filling and cracks were selected and randomly divided into 3 groups. Samples in group-1 were treated with Heliaseal F fissure sealant, but in group-2 beside the method of group-1, two layers of bonding agent (3M ESPE) have been applied. The teeth in group-3 were treated with Embrace hydrophilic sealant. After 2500 cycles of thermocycling, the samples in each group were separately immersed in 50% silver nitrate solution. Then the samples were sectioned buccolingually. Microleakage was studied under a stereomicroscope at a magnification of 20X. Kruskal-Wallis and Kolmogorov-Smirnov tests were used for analysis of data. Significance level was considered <0.05.

Results: The minimum and maximum microleakage was observed in group-1 and 3, respectively. Statistically, there was a significant difference in microleakage between groups-1 and 3 and between groups-2 and 3 ($P < 0.05$). Also, there was no significant different in microleakage between groups 1 and 2.

Conclusion: Under the limitations of the present study, hydrophilic fissure sealant and applying bonding agent before sealant therapy do not appear to be superior to conventional hydrophobic fissure sealant.

Biography

Faraneh Abdolhoseinpour has completed her DDS from Mashhad University of Medical Sciences and completed Postgraduate degree in Pediatric Dentistry Islamic Azad University of medical science Tehran. She has published some papers in ISI and PubMed journals

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