

Effect of surface preparation and shade selection on microleakage of resinous pit and fissure sealants.

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•Introduction

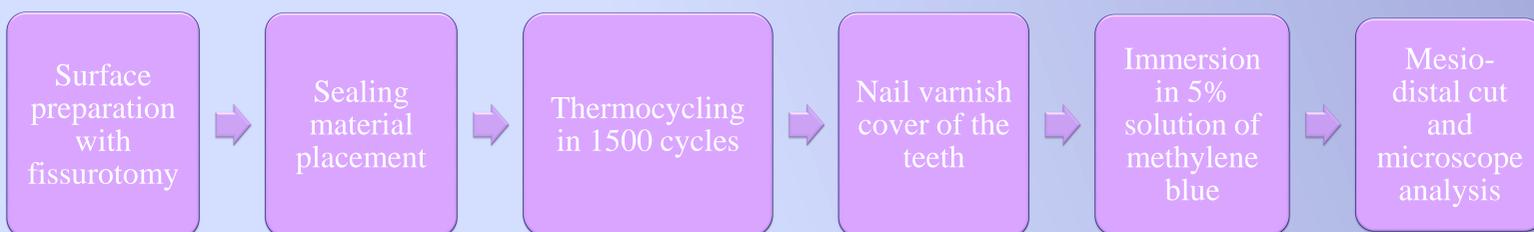
Resinous pit-and-fissure sealants are considered to be an effective caries preventive measure. However, lack of adhesion between the sealant and enamel may result in microleakage. The absence of adequate experimental studies on newly introduced resinous sealants requires more research to be done concerning microleakage and its contributing factors.

•Purpose

The aim of this study was to evaluate the effect of surface preparation and material shade in microleakage of four different resinous pit-and-fissure sealants.

•Methods and Materials

A total of 32 freshly extracted upper and lower premolars and permanent molars were collected and separated equally to 4 groups. The materials used were Vertise Flow, BeautiSealant, Teethmate F1 opaque and natural and placed according to manufacturer's instructions. The experimental procedure was as follows:



•Results

Kruskal-Wallis test was used to evaluate whether significant difference existed and Mann-Whitney test was conducted to explore the significant differences (Statistical Software SPSS 20.0)

Ascending microleakage values were:

BeautiSealant < Teethmate F1 Natural < Teethmate F1 Opaque < Vertise Flow

| <i>Comparison of microleakage between the groups</i> | | |
|--|----------------------|-------------------------|
| Groups | | P-value |
| <i>1) Effect of surface preparation</i> | | |
| Vertise Flow | Teethmate F1 | >0.05 (non-significant) |
| Vertise Flow | BeautiSealant | <0.05 (significant) |
| <i>2) Effect of shade selection</i> | | |
| Teethmate F1 Opaque | Teethmate F1 Natural | >0.05 (non-significant) |
| Teethmate F1 Opaque | BeautiSealant | <0.05 (significant) |
| Teethmate F1 Natural | BeautiSealant | >0.05 (non-significant) |

•Conclusions

- 1) Type of surface preparation plays an important role in the pit-and-fissure sealants retention.
- 2) The use of primer resulted in better sealing while self-adhering material showed worse behavior in terms of microleakage.
- 3) Shade selection is not significantly involved in marginal sealing quality, however clear sealants exhibit superior performance in terms of microleakage.

•References

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