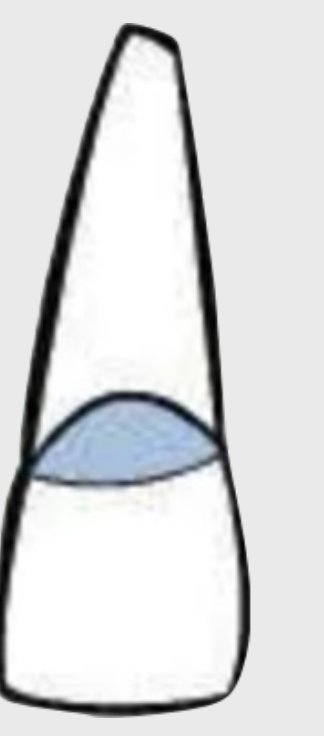


Survival of Different Restorative Materials used for treatment of Class V Caries Lesions: CAT Summary



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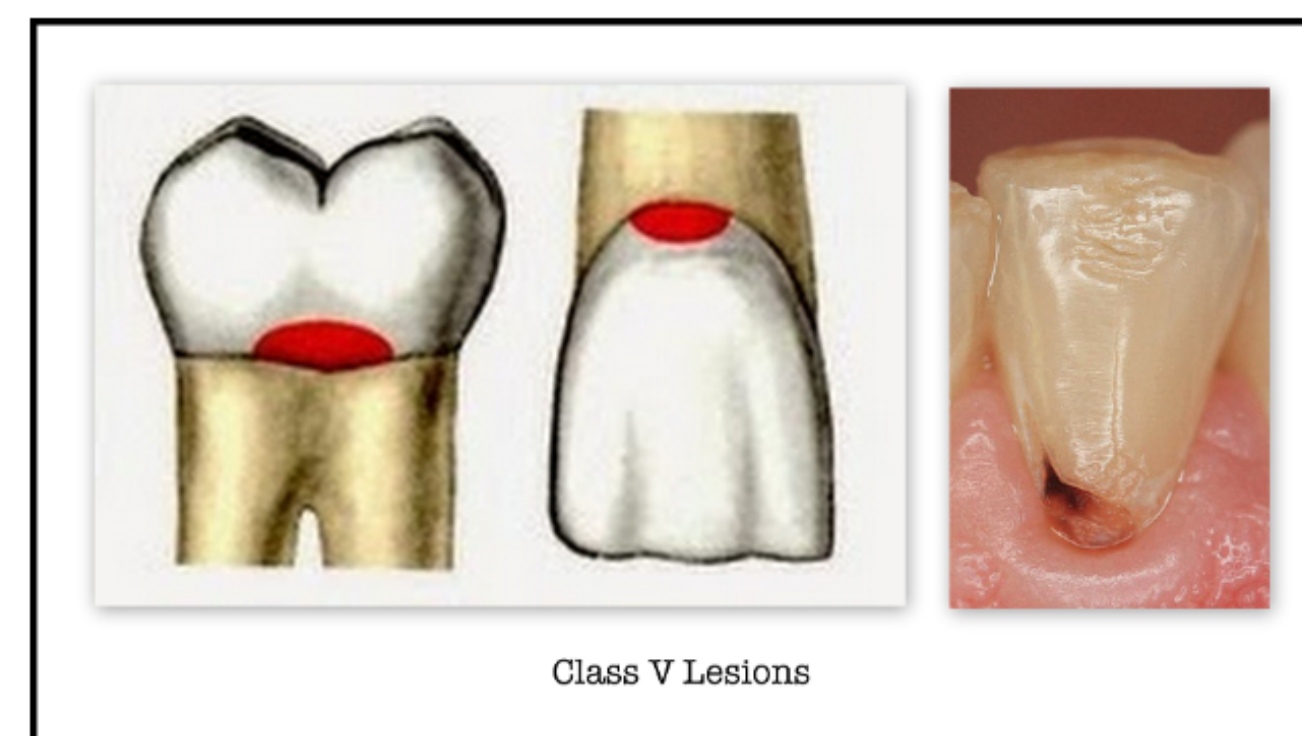
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CLINICAL PROBLEM

- The survival of class V restorations related to caries is dependent on the type of restorative material used and is known to have higher rates of failure (1).
- The longevity of such restoration is relevant to decrease operative and financial burden to the patient (1).
- Restorative materials presented: 2-3 steps etch-and-rinse adhesive composite (2-3 ER/CC); Glass ionomer cement (GIC); Resin-modified glass ionomer cement (RMGIC).

CLINICAL QUESTION

“Among adults with class V cavitated caries lesions in vital permanent teeth, to what extent do various alternative restorative materials impact the survival rate of the treatment?”



Class V Lesions
Dentodontics (Feb 26th, 2015). GV. Black's classification of caries. Retrieved from <https://dentodontics.com/2015/02/26/gv-black-s-classification-of-caries-lesions/>

EVIDENCE SEARCH

- MeSH Term: Dental caries, Amalgam, Composite resins, Glass Ionomer Cements
- Keywords: tooth caries, teeth caries, caries lesion, dental amalgam, tooth amalgam, teeth amalgam
- Filters: Meta-analysis, systematic review, randomized control trials
- Selected study: Systematic Review: J Schmidt et al., 2023

CLINICAL BOTTOM LINE

The materials compared (composite, GIC, resin-GIC) did not show clinically meaningful differences in terms of restoration survival within a follow-up of 6-24 months.

RESULTS

Systematic review and network meta-analysis (NMA):

J Schmidt et al., 2023. 15 studies were included in the systematic review, and 9 were eligible for NMA (ranging from 1990- 2021). The longest follow-up in the NMA= 24 months

At 24 months :

Considering that a difference of 15% is clinically meaningful

When comparing 2-3 ER/CC and GIC, 2-3 ER/CC has 10% higher survival rate (95% CI: 5% to 14%) than GIC. The results are statistically significant, not clinically meaningful but clinically decisive, showing no effect.

When comparing RMGIC and GIC, RMGIC has 8% higher survival rate (95% CI: 2% to 12%) than GIC. The results are statistically significant, not clinically meaningful but clinically decisive, showing no effect.

When comparing RMGIC and 2-3 ER/CC, 2-3 ER/CC has 0.4% higher survival rate (95% CI: -0.6% to 1%) than RMGIC. The results are not statistically significant, not clinically meaningful, but clinically decisive, showing no effect.

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CLINICAL APPLICABILITY

- The generalizability can be compromised by the variety of population age, health conditions (healthy vs cancer patients) and location (countries; private vs university setting).
- Presence of co-interventions (fluoride application) in relation to secondary caries control
- Longer follow-up would be preferable to see our outcome of interest.
- Restorative materials, adhesive strategies and restorative techniques are affordable and available in Canada

STRENGTHS AND LIMITATIONS

Strengths:

- The study design itself
- Rigorous search strategy
- PRISMA diagram
- Cochrane risk of bias tool2 (RoB 2.0)
- CINeMa framework to assess the confidence of NMA results
- Low risk of publication bias

Limitations:

- Language and time search limits were not justified
- Low number of studies and restorations for analysis at long term follow up
- Heterogeneity in study population samples (e.g., nursing home, cancer survivors)
- Location where included studies were conducted was not reported.
- Low confidence of NMA according to CINeMa framework

REFERENCE

(1) Schmidt, J., Proesl, S., Schulz-Kornas, E., Haak, R., Meyer-Lueckel, H., Campus, G., & Esteves-Oliveira, M. (2024). Systematic review and network meta-analysis of restorative therapy and adhesive strategies in root caries lesions. *Journal of Dentistry*, 142. <https://doi.org/10.1016/j.jdent.2023.104776>.