SOURCE REFERENCES: RESIN & COMPOSITE MATERIALS

Kurt et al. published a paper titled, “Evaluation of residual monomer release and toxicity of self-adhesive resin cements”.

ABSTRACT
The aim of this study was to evaluate the amount of leached residual monomers from self-adhesive resin cements and evaluate their toxicity in-vitro. A total of 60 disk-shaped specimens (5 mm in diameter and 0.5 mm in thickness) were prepared from each cement (RelyX U200, SpeedCEM, G-Cem) (n=20). Specimens were immersed in artificial saliva and the amount of released monomers [urethane dimethacrylate (UDMA) and triethyleneglycol dimethacrylate (TEGDMA)] was identified. Then, the cytotoxicity and genotoxicity effect on cells were evaluated using the defined amounts of released monomers from cements. The highest monomer release was detected in G-Cem ($p<0.05$). Released UDMA and TEGDMA from self-adhesive resin cements induced cytotoxicity and genotoxicity effect on cells.

CONCLUSIONS

Within the limitations of this study, the following conclusions can be made:

1. The highest total cumulative amounts of residual monomers were eluted from G-Cem.

2. Assessment of leaching in the three self-adhesive resin cements for 1, 24 and 72 h revealed that the lowest amount of monomer was leached after 1 h.

3. Residual monomers released from self-adhesive resin cements induced in vitro cytotoxicity and genotoxicity in fibroblast cells.

4. The release of TEGDMA and UDMA from self-adhesive resin cements are available in artificial saliva at all the periods measured. These monomers induce cytotoxic and genotoxic effects which may have clinical adverse effects. However long-term in vitro and in vivo studies are needed to confirm these results.

SOURCE A SOURCE B
SOURCE C SOURCE D
SOURCE E SOURCE F
SOURCE G SOURCE H