Cytotoxic and Genotoxic effects of three cements used in fixed prosthesis

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Review
Durability and success of oral rehabilitation depends on the adhesion to the dental structures for long periods of time. Adverse effects result from all materials and devices used in the oral cavity. Dental cements, essential for the success of oral rehabilitation, may be responsible for the release of substances that can induce negative effects on cells, including their death.

Objectives
The aim of this study is to compare the cytotoxic and genotoxic effects of three luting cements, namely the glass ionomer cement Ketac™ Cem EasyMix CIV, the resin-modified glass ionomer cement Ketac™ Cem Plus CIVMR and the resin cement Relyx™ Unicem 2 Automix CR - light cured and non-light cured.

Results
- CV is slightly cytotoxic
- CR is severely cytotoxic
- CIVMR is moderately to slightly cytotoxic

Cell viability is related with cement extracts amount

Conclusion
CIV is less cytotoxic than the CIVMR, and both have an effect in terms of cellular mortality statistically lower than the other two (CR and CR-UV), which between them are not significantly different.

Light cure of resin cements does not seem to reduce fibroblastic cytotoxicity.

Resin cement also showed genotoxicity, which is higher without light cured treatment.

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