The importance of storage time for human dental pulp cells isolation

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Abstrak

Objective: To compare the importance of storage time and the tooth type for isolation of dental pulp cells (DPCs) from extracted human teeth.

Methods: 35 human teeth were used in this study. The teeth were stored in phosphate buffered saline (PBS) after extraction and divided into two groups randomly according to the time elapsed between extraction and isolation. In group one, the isolation was performed within 2 hours and in the other group it was performed 24 hours after extraction.

Results: No significant differences between isolation time and total cell counts (p 0.483) and between isolation time and viable cells (p 0.341). No significant differences between the first molar and the premolar related cell counts and viable cells, but both teeth groups showed significant higher viability and had higher total cell amounts than third molars after isolation. Statistically significant correlations were found between age of donors and viable cells and viability after 24 hours isolation time.

Conclusion: The immediate isolation of DPCs is not necessary after the tooth extraction. The tooth can be stored in PBS at room temperature up to twenty four hours after the extraction without a significant reduction in cell viability and counts. The cells obtained from younger donors might have more chance for more viability even if storage time was extended. Premolars and first molars were better donors than the third molars for DPCs isolations and the high number of success revascularization rate in premolars with necrotic immature premolars might be because of their high cell viability potentials.