Efek Toksik Larutan NaOCl 2.5%, EDTA 17%, dan Klorheksidin 2% Terhadap Viabilitas Sel Punca Mesenkim Pulpa = The Toxic Effect of NaOCl 2.5%, EDTA 17%, and CHX 2% Solutions on Viability of Dental Pulp Mesenchymal Stem Cells.

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Abstrak

Latar Belakang: Salah satu kunci keberhasilan perawatan regenerasi endodontik adalah disinfeksi dari sistem saluran akar. Bahan irigasi bersifat bakterisid dan mampu mempertahankan kelangsungan hidup sel punca.

Tujuan: Membandingkan efek toksik larutan NaOCl 2.5%, EDTA 17%, dan CHX 2% terhadap viabilitas sel punca mesenkim pulpa.

Metode: Kultur sel primer dari gigi molar ketiga imatur. Sel punca mesenkim pulpa dideteksi dengan marker STRO-1 menggunakan uji immunofluorescence. Sel dipaparkan dengan bahan uji dan viabilitas sel dihitung dengan uji MTT.

Hasil: Terdapat perbedaan bermakna viabilitas sel punca mesenkim pulpa ketiga larutan dibandingkan kontrol (p ≤ 0.05). Tidak terdapat perbedaan bermakna viabilitas sel antar larutan (p ≥ 0.05).

Kesimpulan: Ketiga larutan memiliki efek toksik terhadap viabilitas sel punca mesenkim pulpa.
<hr>Background: One of the key to the success of regeneration endodontic treatment is the disinfection of the root canal system. Irrigation materials not only have bactericidal properties but also able to maintain the viability of stem cells.

Objective: To compare the toxic effects of NaOCl 2.5%, EDTA 17%, and CHX 2% solutions on the viability of dental pulp mesenchymal stem cells.

Methods: Primary cultures cells taken from immature third molars. Dental pulp mesenchymal stem cells was detected by STRO-1 marker using immunofluorescence assay. Cells were exposed to three solutions and cell viability was analyzed using the MTT assay.

Results: There were significant differences from the viability of dental pulp mesenchymal stem cells of three solutions when compared with controls (p ≤ 0.05). There were no significant differences from cell viability when compared between solutions (p ≥ 0.05).

Conclusion: All solutions have toxic effects on the viability of dental pulp mesenchymal stem cells.