

INTISARI

Media penyimpanan diperlukan untuk menjaga viabilitas sel ligamen periodontal gigi avulsi yang tidak bisa langsung dilakukan replantasi. *Hank's Balanced Salt Solution* (HBSS) dikenal efektif menjaga sel ligamen periodontal gigi avulsi, namun sulit didapatkan. Air kelapa dikenal memiliki kandungan nutrisi yang baik (kalium, kalsium, magnesium, sodium, klorida fosfat dan gula), memiliki harga yang murah dan mudah didapatkan. Tujuan penelitian ini membandingkan sitotoksitas media penyimpanan gigi avulsi, HBSS dan air kelapa dengan menggunakan uji MTT.

Sampel penelitian didapatkan dari sel fibroblas ligamen periodontal gigi pasien yang telah dicabut untuk keperluan orthodontik, di Bagian Bedah Mulut RSGM Prof. Soedomo. Sampel dikultur dan dibagi ke dalam *microplate* 96, yang setiap sumurannya berisi 2×10^4 sel. Sampel selanjutnya dipapar dengan larutan HBSS dan air kelapa masing-masing sebanyak 100 μ L, kemudian diinkubasi selama 60 menit, untuk selanjutnya dilakukan uji MTT.

Hasil uji *student t-test* menunjukkan adanya perbedaan signifikan pada persentase viabilitas sel fibroblas yang dipapar dengan larutan HBSS dan air kelapa sebagai media penyimpanan gigi avulsi ($p = 0,01$), dengan nilai persentase viabilitas sel fibroblas yang dipapar air kelapa (102,97%) lebih tinggi dari nilai persentase viabilitas sel fibroblas yang dipapar HBSS (94,35%). Nilai persentase viabilitas sel fibroblas kedua kelompok sel perlakuan berdasarkan ISO 10993-5 termasuk golongan tidak toksik. Kesimpulan dari penelitian ini tidak ada perbedaan sitotoksitas media penyimpanan gigi avulsi larutan HBSS dan air kelapa melalui uji MTT, dan terdapat perbedaan signifikan persentase viabilitas sel fibroblas yang dipapar larutan HBSS dan air kelapa, dengan persentase viabilitas sel fibroblas yang dipapar air kelapa lebih tinggi daripada HBSS.

Kata kunci: Air kelapa, HBSS, avulsi gigi, media penyimpanan, MTT.

ABSTRACT

Storage media is needed to maintain the viability of periodontal ligament cells of avulsed teeth which can't replace into their socket immediately. Hank's Balanced Salt Solution (HBSS) known effective to maintain the periodontal ligament cell of avulsed teeth, but hard to obtain. Coconut water is recognized to have good nutrients (kalium, calcium, magnesium, sodium, chloride, phosphate, sugar) and also it is cheap and easy to get. The purpose of this study is to compare cytotoxicity of avulsed teeth's storage media, HBSS and coconut water using MTT assay.

Samples were taken from fibroblast cells of periodontal ligament from the patient who underwent tooth extraction for orthodontic needs at Oral Surgery Department of Prof. Soedomo Dental Hospital. Samples were cultured and divided in microplate 96 which in every well had 2×10^4 cell. Samples then were exposed to 100 μ L of HBSS solution and coconut water, incubated for 60 minutes, and then tested with MTT assay.

Result of student t-test showed there was significant percentage difference of fibroblast cells viability that was exposed with HBSS solution and coconut water as avulsed teeth's storage media ($p = 0,01$), with percentage of coconut water exposed fibroblast cell viability (102,97%) higher than HBSS exposed fibroblast cell viability (94,35%). Both percentages, based on ISO 10993-5, were categorized as a non toxic group. In conclusion, there was no cytotoxicity difference between HBSS coconut water by MTT assay, and there was significant percentage difference between their fibroblast cells viability with higher percentage in coconut water.

Keyword: Coconut water, HBSS, avulsed teeth, storage media, MTT.