INTISARI

Prosedur irigasi merupakan tahapan penting dalam pulpotomi untuk menghilangkan mikroorganisme. Bahan irigasi yang ideal memiliki efek antibakteri dan tidak bersifat toksik. Bonggol nanas berpotensi dikembangkan sebagai bahan irigasi karena mengandung bromelin, flavonoid, saponin, tanin, dan alkaloid. Tingkat toksisitas bahan dievaluasi melalui uji viabilitas sel terhadap keseluruhan sel pulpa yang terdiri atas sel punca mesekimal, sel fibroblas, sel odontoblas, dan sel imun. Penelitian ini bertujuan mengetahui pengaruh ekstrak bonggol nanas terhadap viabilitas sel pulpa.

Penelitian ini menggunakan ekstrak bonggol nanas pada konsentrasi 10%, 20%, 30%, 40%, dan 50% dengan tiga kali replikasi. Kontrol positif menggunakan NaOCl 2,5% dan kontrol negatif menggunakan sel tanpa perlakuan. Sel pulpa diberi perlakuan dengan ekstrak bonggol nanas lalu diinkubasi dalam inkubator CO_2 pada suhu 37°C selama 24 jam. Uji viabilitas sel dilakukan menggunakan metode MTT dengan membandingkan nilai *optical density* pada kelompok perlakuan dan kelompok kontrol. Data viabilitas sel dianalisis menggunakan uji *one-way ANOVA* dilanjutkan uji *Tukey HSD*.

Hasil penelitian menunjukkan rerata viabilitas sel pulpa secara berturut-turut dari konsentrasi 10%; 20%; 30%; 40%; dan 50% dengan rerata sebesar 98,14±29,4%, 47,25±5,53%, 34,62%±11,11%, 34,99±22,00%, 33,58±14,10%. Uji ANOVA menunjukkan pengaruh bermakna pemberian ekstrak bonggol nanas terhadap viabilitas sel pulpa ($p<0,05$). Hasil uji *Tukey HSD* menunjukkan tidak terdapat perbedaan signifikan antara konsentrasi 10% dengan kontrol negatif. Konsentrasi 10% memiliki perbedaan signifikan terhadap kontrol positif dan konsentrasi lainnya, sementara konsentrasi 20%, 30%, 40%, dan 50% setara dengan kontrol positif. Kesimpulan penelitian ini adalah pemberian ekstrak bonggol nanas berpengaruh bermakna terhadap viabilitas sel pulpa dan konsentrasi 10% memiliki viabilitas sel tertinggi.

Kata Kunci: bonggol nanas, viabilitas, sel pulpa

ABSTRACT

Irrigation is an important step in pulpotomy for eliminating microorganisms. An ideal irrigating solution has antibacterial effects and is not toxic. Pineapple stem has the potential to be developed as an irrigating solution because it contains bromelain, flavonoids, saponins, tannins, and alkaloids. The toxicity level of the material was evaluated through a cell viability test on all pulp cells consisting of mesenchimal stem cells, fibroblasts, odontoblasts, and immune cells. This study aimed to determine the effect of pineapple stem extract on pulp cell viability.

This study used pineapple stem extract at concentrations of 10%, 20%, 30%, 40%, and 50% with three replications. The positive control used 2.5% NaOCl and the negative control used untreated cells. Pulp cells were treated with pineapple stem extract and then incubated in a CO_2 incubator at 37°C for 24 hours. The cell viability test was performed using the MTT method by comparing the optical density values of the treatment groups and the control groups. The cell viability data were analyzed using one-way ANOVA followed by Tukey HSD.

The results showed that the mean pulp cell viability for the 10%, 20%, 30%, 40%, and 50% concentrations were 98.14±29.4%, 47.25±5.53%, 34.62±11.11%, 34.99±22.00%, and 33.58±14.10%. The ANOVA test showed a significant effect of pineapple stem extract on pulp cell viability $p<0.05$. The Tukey HSD test showed that there was no significant difference between the 10% concentration and the negative control. The 10% concentration had a significant difference to the positive control and other concentrations, while the 20%, 30%, 40%, and 50% concentrations were equivalent to the positive control. The conclusion of this study is that pineapple stem extract has a significant effect on pulp cell viability and the 10% concentration has the highest viability.

Keywords: *pineapple stem, viability, pulp cells*