The antibacterial evaluation of dandelion extracts as root canal irrigating solutions (A comparative study)

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Abstract

Irrigation has a central role in endodontic treatment. Several irrigating solutions have the antimicrobial activity and actively kill bacteria and yeasts when introduced in direct contact with the microorganisms.

The purpose of this study was to evaluate the antimicrobial effectiveness of Dandelion (Taraxacum officinale) root and leaf extracts as possible irrigant solutions used during endodontic treatments, and both were compared to Sodium hypochlorite, Propolis and Ethyl alcohol.

Forty seven human extracted single rooted teeth were selected. The teeth were decoronated using a diamond disk to have a length of 15 mm ±1 mm and they were instrumented using the hybrid technique. All roots were sterilized by autoclave, five roots without bacterial inoculation served as negative control, the rest inoculated with Enterococcus faecalis, then five roots selected randomly as positive control then the remaining 37 roots divided into five groups of 8 samples each except group V with 5 roots. Group I: irrigated with Propolis extract. Group II: irrigated with Dandelion leaf extract. Group III: irrigated with Dandelion root extract. Group IV: irrigated with Sodium hypochlorite. Group V: irrigated with Ethyl alcohol. Bacterial swabs were taken from each root and cultured. Bacterial growths were calculated by counting the number of colonies appeared on the cultures. Then the results were statistically analyzed by Kruskal-Wallis H test and Mann-Whitney U test.

Within the limitation of this in vitro study, the Dandelion leaf extract and Dandelion root extract proved to have some antimicrobial properties. The Sodium hypochlorite still has the best antimicrobial effect, followed by Propolis, Dandelion root, Ethyl alcohol then Dandelion leaf.