THE DIFFERENCES OF MANGOSTEEN PEEL EXTRACT IRRIGANT AND NAOCL 2.5% ON ROOT CANAL CLEANLINESS

ABSTRACT

Background: Preparation, one of the stages in endodontic treatment, always produces debris as a result of instrumentation on root canal walls. Debris consists of organic and inorganic materials. Irrigation need to be performed in every preparation so that debris and microorganisms can be removed from root canal walls through flushing mechanism. NaOCl 2.5% is the most popular irrigant used in endodontic treatment. However, NaOCl only works on organic tissue. Mangosteen peel extract contains various active compounds, such as saponin. Saponin acts as surfactant so as to lower the surface tension and remove debris from the root canal walls. Purpose: to compare the cleanliness of root canal walls following irrigation with NaOCl 2.5% and mangosteen peel extract. Method: Eighteen mandible premolar extracted for orthodontics necessity were used in this study. The teeth were divided into three groups, in which each group consists of six teeth. All of them were instrumented with ProTaper for Hand Use and irrigated. Group 1 used aquadest as irrigant, group 2 used NaOCl 2.5%, and group 3 used mangosteen peel extract 400 ug/ml. The roots were split longitudinally into halves and in 1/3 of apex. The surface of the canal walls were examined using scanning electron microscope. Photomicrographs were scored by three independent observers and statistically tested. Result: There were significant differences between three groups (p<0.05). Group 3, irrigated with mangosteen peel extract 400 ug/ml, had the smallest median score that was 1. Conclusion: Mangosteen peel extract is more effective than NaOCl 2.5% in cleaning root canal wall from debris.

Keyword: root canal cleanliness, mangosteen peel extract, sodium hypochlorite, debris