ABSTRACT

Background: Irrigation is one of the most important step in endodontic therapy. This process is at risk of extrusion of irrigation solution to periapical tissue which can delay the healing of periodontal ligament. Therefore, irrigation solution must have minimal cytotoxicity properties. Sodium hypochlorite (NaOCl) and chlorhexidine (CHX) is the most common irrigation solution. Propolis contains flavonoid and phenolic acid that can be considered as an alternative to irrigation solution. Purpose: The aim of this study is to find the cytotoxicity of sodium hypochlorite, chlorhexidine and propolis on human periodontal ligament fibroblast cell (HPDLFc). Methods: HPDLFc was obtained from the apex of the first premolar. This cell was divided into several group and exposed to several concentration of NaOCl, CHX or propolis. The count of fibroblast will be measured by spectrophotometer. The percentage of cytotoxicity will be calculated to obtain lethal concentration (LC)50 value. Result: NaOCl is toxic at concentration of 0.25µl/ml or greater. CHX is toxic at concentration of 0.016 µl/ml or greater. Propolis is toxic at concentration of 92.70 µg/ml or greater. Conclusion: NaOCl, CHX and propolis have cytotoxicity effect on HPDLFc at a certain concentration

Keyword: cytotoxicity, NaOCl, CHX, propolis, HPDLFc counts