HEMATOLOGICAL PROFILE AND HISTOPATHOLOGICAL CHANGES OF INDUCED PERIODONTITIS IRRIGATED BY LEMONGRASS *Cymbopogon citratus* (DC.) Staph ON MALE RATS *Rattus norvegicus*

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ABSTRACT

The systemic impact of periodontitis can interfere the quality of life of an animal. The purpose of this study was to evaluate whether lemongrass *Cymbopogon citratus* (DC.) Staph extract irrigation given supragingiva affect the hematological profile and histopathological changes of male rats *Rattus norvegicus*. Under general anaesthesia, this research was performed on 25 male Wistar rats by placing 3/0 non-absorbable silk thread ligature around the lower incisors. After 7 days of periodontitis induction, three sample groups were given lemongrass extract irrigation of 0.13%, 0.25% and 0.50% twice daily for 7 days while the negative and positive control group were given sterile aquadest solution and 0.2% chlorhexidine solution respectively. Blood samples were obtained from each rats through cardiac puncture. Haematological profile such as hemoglobin, leucocytes, erythrocytes, haematocrit, mean corpuscular volume, mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration, total leucocytes and leucocytes differential count and thrombocytes were assessed. There is a significant change on the number of red blood cells for 0.25% treatment and increase number of leucocytes to promote wound healing. Lower incisive of each rats were sectioned for histopathological evaluation where it shows an intense inflammatory cell infiltration for negative control group and the least amount of inflammatory cell infiltration and osteolysis using 0.25% extract. The result of this research showed that lemongrass extract irrigation of 0.25% is the most effective extract to treat periodontitis which can act as an anti-inflammation alternative herbal treatment from using chemical treatments.

Keywords: Chemical treatment, inflammatory cell infiltration, ligature, periodontitis, wound healing