

ABSTRACT**EFFECT OF TOPICAL ALOE VERA LEAF (*ALOE VERA* LINN) EXTRACT BY STIMULATING IFN- γ , TGF- β AND FIBROBLAS ON WOUND HEALING ACCELERATION PROCESS IN POST-TOOTH EXTRACTION****Nenny Prasetyaningrum**

Slow wound healing post tooth extraction often occurs, so that the activity of the patients become disturbed. Aloe vera is known to contain substances that can accelerate wound healing process. So far, the effect of aloe vera to accelerate the process of tooth extraction wound healing is not clear. This study used male rats (*Rattus norvegicus*). Extraction was performed on the lower left incisor of every 30 male rats. 30 rats were divided randomly into 6 groups, distinguished by the length of treatment. The control groups receiving placebo (PEG) were divided into 3 groups, the K1 (3 days), K2 (5 days), and K3 (7 days). Observations of IFN- γ -producing cells, TGF- β -producing macrophage and fibroblast cells used hematoxylin eosin staining and immunohistochemical techniques. Statistical analysis showed that the results of factorial Anova test revealed the effect of topical aloe vera leaf extract on the variable of IFN- γ -producing cells ($F = 52.151$, $p = 0.000$), effect of the duration of topical aloe vera leaf extract on the variable of IFN- γ -producing cells ($F = 40.569$, $p = 0.000$), and the influence of interaction and duration of topical aloe vera leaf extract on the variable of IFN- γ -producing cells ($F = 8.714$, $p = 0.001$). Topical aloe vera leaf extract had effect on the variable of TGF- β producing macrophage ($F = 43.401$, $p = 0.000$). Duration of topical aloe vera leaf extract had of the effect on the variable of TGF- β producing macrophage ($F = 24.076$, $p = 0.000$), and the interaction and duration of topical aloe vera leaf extract had influence on the variable of TGF- β producing macrophage ($F = 4.377$, $p = 0.024$). Topical aloe vera leaf extract had effect on the variables of fibroblast ($F = 103.746$, $p = 0.000$). The duration of topical aloe vera leaf extract had effect on fibroblast cell variables ($F = 231.086$, $p = 0.000$). The interaction and duration of topical aloe vera leaf extract had influence on the variable of fibroblast ($F=5,882,p=0,008$). This experimental study showed the that the administration of topical aloe vera leaf extract can accelerate the healing of tooth extraction wounds by stimulating the secretion of IFN- γ and TGF- β by macrophages and stimulate the proliferation of fibroblast cells.

Keywords: healing wounds, aloe vera, macrophages, fibroblasts