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Efficacy of *Chromolaena odorata*, *Curcuma longa* extraction and povidone-iodine on surgical wound healing of laboratory rats

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Abstract

The efficacy of *Chromolaena odorata*, *Curcuma longa* extraction and povidone-iodine (PVI) were tested on surgical wound healing of adult female rats. Sixteen of adult female rats were divided into four groups. Group 1 is negative group, the rat don't treated with herbal extraction. Group 2, rats were treated with 10% of PVI. Group 3, rats were treated with 6% *C. longa* extraction and group 4, rats were treated with 6% *C. odorata* extraction by applied over the lesion. Wound healing was examined at day 3, 6 and 9 via wound reduction determination, wound area and histological evaluation. The results found 6% of *C. odorata* extraction showed great result of wound area and wound reduction, with better than that the result with 6% of *C. longa* and 10% of PVI treated. All rats were demonstrated decrease in wound size that were seen in all groups at all-time observe. At the final experiment, rats were treated with 6% of *C. odorata* had highest of wound reduction (0.43 cm), followed by treated with 6% of *C. longa* (0.35 cm) and treated with 10% of PVI (0.32 cm), the result of PVI is similar with negative group (0.33 cm). These results at day 6 and day 9 were presented different significant ($P < 0.05$) between group of wound reduction. The result of wound area correlated with wound reduction, we demonstrate that the female rats were treated with 6% *C. odorata* extract had greatest result of wound area at all day treated. The finish experiment, rats were received with 6% of *C. odorata* can reduced surgical wound area from 1.00 cm to 0.57 cm at day 9. In addition result, histological evaluation, rat in all groups found similar cytology include collagen, connective tissues, lymphocyte and macrophage, while in group that treated with herbal extraction showed add of neutrophil and leukocytes.

Keywords: Wound healing, *Chromolaena odorata*, *Curcuma longa*, Povidone-iodine