WOUND HEALING

INVESTIGATION OF THE EFFECT OF TAMANU OIL ON WOUND HEALING IN RATS

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Background: Tamanu is a plant oil derived from the fruit and seeds of the Calophyllum inophyllum tree. Although scientific data on tamanu oil is limited, it is recommended worldwide for the treatment of abrasions, burns, diabetic wounds and scars.

Objective: This study aimed to compare the wound healing efficacy of topical use of tamanu oil with a reference drug in rats.

Material and Methods: The rats were divided into three groups with seven subjects in each group. Using a 5-mm biopsy punch tool, three wound sites were formed each rat. Group PS (control) received physiological saline on the lesions; the Group Tamanu received topical treatment with tamanu oil; and the Group Centella was treated with Centella asiatica. Wound healing was clinically evaluated using wound healing scoring and with wound contraction. A 5-mm punch biopsy was taken from the wound sites of each rat on days-7, 14 and 21.

Results: Wound contraction was significantly lower in Group Tamanu compared to other groups. The intensity of macrophage infiltration was significantly higher in Groups Centella and Tamanu than in Group PS on day-7, but significantly lower in Group Tamanu than the other groups on day-14. On day-7, reepithelialization was significantly lower in Group Tamanu than in PS. More mature granulation tissues were observed in Groups Centella and Tamanu compared to PS group on day-7, but the number of these tissues was significantly lower in Group Tamanu than the other groups on day-14. Fibrosis and collagen density was higher in Group Tamanu than the other groups on day-7.

Conclusions: In wound healing in rats, tamanu oil accelerated the formation of macrophage-granulation tissues-fibrosis and it has provided less wound contraction. Although Group Tamanu had lower reepithelization than the other groups on day 7, this process was completed by day 14.