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Evaluation of Wound Healing Activity Following Aqueous Extract of Citrus Limon Seeds in Experimental Rats

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ABSTRACT

Background: Ethnomedicinal plants have been identified and prescribed all over human history. Plants make many chemical compounds that are for biological functions, including wound healing, and defence against fungi and bacteria. The medicinal plants are used widely because of their effectiveness, fewer side effects and relatively low cost. Citrus limon is a medicinally useful fruit with many remedial properties. The purpose of this study was determination of healing activity of aqueous extract of Citrus limon seeds (CLS) on wound-healing of skin in rats. To our knowledge, this is the first study on healing properties of the plant.

Material and Methods: A full-thickness cutaneous defect (2×2cm) was induced on the back of 20 rats. The animals were randomly divided into four equal groups, treated with Tetracycline 3% (Group 1), basal cream (Group 2), cream of aqueous extract of CLS 10% (Group 3) and untreated=control (Group 4). Five animals of each group were euthanized at 10 day post-injury (DPI) and number of lymphocytes, macrophages, fibrocytes, fibroblasts, and ratio fibrocytes/fibroblasts (magnification ×200) of skin dermis were counted and evaluated through histopathological analyses.

Results: The number of lymphocytes, macrophages, fibrocytes, fibroblasts, and ratio fibrocytes/fibroblasts of skin dermis in 10 DPI as follows respectively: Group 1: 7.30±3.30a, 1.60±1.26b, 2.70±1.56a, 21.10±3.66b, 0.12±0.07a. Group 2: 1.00±1.15c, 0.30±0.67c, 1.20±1.61c, 49.70±9.32a, 0.01±0.03c. Group 3: 0.20±0.42d, 0.00±0.00d, 0.90±1.10c, 50.50±6.24a, 0.02±0.02c. Group 4: 3.50±2.17b, 2.20±1.81a, 1.90±1.59bc, 27.70±6.12b, 0.06±0.05b.

Conclusion: As they are seen number of lymphocytes and macrophages reduced and number of fibroblasts increased greatly in Group 3 to Group 1, 2, and 4 in 10 DPI. In the present study we demonstrate that aqueous extract of CLS is efficient in wound-healing and that it cures conditions at the wound site to elevate better healing.

Keywords: Citrus Limon Seeds, Aqueous Extract, Wound Healing Potential

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