Histomorphometric Analysis Of Reepitilelization And Collagen Matrix Of Cutaneous Wounds Treated With Hydroalcoholic Extract From The Leaves Of Conocarpus Erectus Linnaeus

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ABSTRACT

Introduction: The species Conocarpus erectus Linnaeus belonging to the Combretaceae Family, that contains 18 genera, where the genus Combretum is considered to be the largest distributed on the whole African continent, possessing about 370 species that are abundantly used in folk medicine due to its chemical diversity, its low toxicity and low cost. The species of this family are widely used as a therapeutic resource for various types of pains, colds, diarrhea, conjunctivitis, pneumonia, mumps, cancer, hypertension, infections and wound treatment. The wound healing is a process that involves the performance of several cell types, extracellular matrix and chemical mediators, in order to promote tissue reconstitution. Objective: To evaluate reepithelialization and collagen deposition through the histomorphometry of the scar tissue treated with the hydroalcoholic extract of the leaves of Conocarpus erectus Linnaeus. Methodology: For the general outline of the experiment, male Wistar rats (200-250 g) were randomly divided into four groups: Group I (Negative Control - Lanette Cream); Group II (10% FHFCF - Cream formulation of the hydroalcoholic extract of dry leaves C. erectus); Group III (Cream formulation of the hydroalcoholic extract of fresh leaves of C. erectus) and Group IV (Dexpanthenol - Standard). Each group was subdivided into four subgroups with five animals for euthanasia on the 7th and 21st day. The animals were previously anesthetized with a combination of ketamine and xylazine and were later placed in a ventral decubitus for manual trichotomy and antisepsis with 0.1% iodized alcohol, the area of incidence was marked using a metal punch with a cutting blade (± 10 mm²). Then, the treatments were started and a new layer (± 95 mg) was applied daily. Histological preparations were submitted to Hematoxylin-Eosin technique. The histological images were captured by a digital camera coupled to an optical microscope, obtaining 06 fields per slide with a magnification of 10X and 400X, and the photomicrographs were evaluated through ImageJ 1.50 d software, where the reepithelialization and collagen matrix areas were measured. The results were submitted to the Tukey test and the p value was considered significant for p <0.0001. Results: The wounds treated with FHFCF and FHFCF (10%) had a higher reepithelialization rate in 7th (120.80 ± 10.50 and 128.18 ± 17.01, respectively) and 21st day (124.00 ± 7.89 and 163.00 ± 8.03, respectively) when compared to the negative control at both days (37.50 ± 12.12 and 73.90 ± 5.59). Regarding collagen deposition, treatments with FHFCF and FHFCF (10%) were also shown to be statistically significant when compared to the negative control group. Conclusion: According to the results obtained in this work, the formulations containing the hydroalcoholic extracts of the leaves of C. erectus can be considered to have shown a significant improvement in the re-epithelialization and deposition of collagen of the connective tissue, characterizing acceleration of wound healing.

Keywords: Histomorphometry; Conocarpus erectus; Collagen; Reepithelialization; .

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