World Academy of Science, Engineering and Technology
International Journal of Health and Medical Engineering
Vol:14, No:07, 2020

Efficacy of Topical Ectoin Therapy for Acute Radiodermatitis Associated with Breast Cancer Radiotherapy: A Randomized Controlled Study

Authors : Nagwa E. Abd Elazim, Maha S. El-naggar, Rania H. Mohamed, Sara M. Awad

Abstract : Background: Radiodermatitis is a common side effect of radiation therapy for breast cancer. However, there is no current consensus about effective standard therapy for the prevention and management of radiation dermatitis. Topical ectoine has demonstrated efficacy in the treatment of atopic dermatitis owing to its anti-inflammatory activity. Objective: To evaluate the efficacy of topical ectoine in comparison to traditional topical dexpanthenol treatment in the management of acute radiodermatitis in breast cancer patients undergoing adjuvant radiotherapy. Methods: Fifty patients were randomized to use either dexpanthenol 0.5% cream (25 patients), or ectoin 7% cream (25 patients), applied twice daily to the irradiated area during the radiation period and continued for 2 weeks after cessation of radiotherapy. Assessment of radiation skin toxicity using Common Terminology Criteria of Adverse Events (CTCAE) v4.0, radiation-associated symptoms, and adverse events were undertaken weekly during radiotherapy and 2 weeks after the end of radiotherapy. Results: Topical ectoine showed some clinical benefit over dexpanthenol, as shown by delayed time to onset (at week 3 versus week 2, respectively) and larger number of patients who reached grade 0 at the end of treatment (64% vs. 48%, respectively). The clinical symptoms of pain ($p = 0.003$) and itching ($p = 0.001$) attributable to radiation were less pronounced with ectoine than with dexpanthenol. Burning and hyperpigmentation were the most common side effects with ectoine. However, no significant difference between dexpanthenol and ectoine treatments was found in any of the side effects ($p = 0.1$). Conclusion: Ectoin was overall more effective in improving radiation dermatitis than topical dexpanthenol in breast cancer patients. Ectoin could be proposed as a preventive or curative treatment for patients undergoing postoperative irradiation for breast cancer. Further clinical studies with a larger number of patients are recommended for the confirmation of these preliminary results.

Keywords : breast cancer, dexapanthenol, ectoin, radiation dermatitis
Conference Title : ICCED 2020 : International Conference on Clinical and Experimental Dermatology
Conference Location : Berlin, Germany
Conference Dates : July 23-24, 2020

Open Science Index, Health and Medical Engineering Vol:14, No:07, 2020 publications.waset.org/abstracts/120008.pdf