

Poster Abstracts

PO-60

EVALUATION OF THE PROTECTIVE EFFECTS OF *NERIUM OLEANDER* BY SENSITIVE BIOMARKERS

Semra SARDAS¹, Sevcan Gül AKGUN¹, Sezgin AYDEMİR^{1,2}

¹ Department of Pharmaceutical Toxicology, Faculty of Pharmacy, Marmara University, Istanbul, Turkey, ²Department of Pathology Laboratory Technicianship, Vocational School of Health Related Services, Marmara University, Istanbul, Turkey

Objectives: Even though herbal products could be extensively preferable due to their widespread accessibility, modern scientific methods and clinical trials are needed to be applied to confirm the claims about their therapeutic effects and safety. *Nerium oleander* (*Apocynaceae*), also known as "The Desert Rose", grows widely across the globe in warmer climate areas with a history over 1500 years and has been the subject of research for centuries as a medical herb. It is one of such plants which are famed for its therapeutic efficiency in different diseases globally. Among these is its traditional use in the treatment of dermatological disorders such as dermatitis, eczema, psoriasis, boils, herpes, ringworm, scabies, and warts.

The aim of this study was to evaluate the safety and the wound healing property of *Nerium oleander* (NO). For this purpose the extract of NAE-8® (*Nerium Aloe* Extract) has been obtained from (Nerium SkinCare, Inc.®, USA).

Methods: The animals were randomly divided as; control, burn without treatment, burn- NAE-8®, and burn- silver sulfadiazine (Silverdin®) treatment groups. All treatment groups received their respective topical application twice a day for 14 days. Burn injury is known to be accompanied by release of reactive oxygen species and one of the goals of the dermal health is to provide anti-oxidant support. Malondialdehyde (MDA) and Comet assay were carried out to measure oxidative stress, lipid peroxidation and strand breaks.

Results: Skin MDA levels were higher in the burn group with respect to the control (185.380 ± 17.548 vs. 15.233 ± 1.737 ; $p < 0.001$) and NAE-8® treatment reduced MDA levels significantly (47.068 ± 12.712 ; $p < 0.001$) than Silverdin® (170.36 ± 39.540). The loss of the epidermis and accumulation of polymorphonuclear leukocytes were the major features observed in the wounded skin. NAE-8® treatment reversed this effect via improving epithelization and fibroblast infiltration. Significant decrease in the mean %DNA(T) ($p < 0.01$) was observed in the NAE-8® treatment group (27.907 ± 0.284) as compared to burn group (30.250 ± 0.734).

Conclusion: Today all over the world, various medical and pharmaceutical tests are being performed with the extract of NO to reveal more of its therapeutic potential. Dermis and epidermis degeneration and improving fibroblast infiltration, reduced MDA levels and significant decrease in DNA damage observed in the NAE-8® treatment can be attributed to wound healing and protective effect of the NAE-8®. It is hoped that extreme importance will be given to NO to identify its therapeutic potential to prove itself by combining ancient knowledge of traditional medicine with modern science.