UNITED RESEARCH FORUM
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International E-Conference on

DERMATOLOGY AND COSMETOLOGY

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Interaction between intense pulsed light and skin: data from an animal model

Background: Although its effects remain unknown, the intense pulsed light (IPL) has been extensively used in dermatology and esthetics.

Purpose: This study aimed to address the impact of IPL in neoplastic lesions using an animal model.

Methodology: All experiments followed the European and National legislation. Sixteen ICR female DBA/2JRccHsd mice were randomly assessed to two experimental groups: IPL-exposed (n=8) and non-exposed (n=8). The mice dorsal region was shaved using a machine clipper. The carcinogen 7,12-dimethylbenz[a] anthracene (DMBA; 2mM, single dose) and 12-O-tetradecanoylphorbol-13-acetate (TPA; 100mM, twice a week, for 22 weeks) were applied to all animals. Moreover, IPL-exposed animals were applied with IPL (intensity of 2J/cm2, twice a week, for 22 weeks). At the sacrifice, skin samples were collected and processed for histological analysis. Data was analyzed with SPSS.

Results: IPL-exposed mice developed a lower number of skin lesions when compared with non-IPL-exposed animals (28 versus 46 lesions) (p=0.036). Each group presented 8 preneoplastic epidermal lesions (epidermal hyperplasia). The number of neoplastic lesions was lower in IPL-exposed mice than in non-IPL-exposed ones (20 versus 38 lesions) (p=0.018). Papilloma grade II was the neoplastic epidermal lesion most frequently observed in both groups (9 in IPL-exposed mice versus 19 in non-IPL-exposed mice) (p=0.059). Despite this, the number of microinvasive squamous carcinoma was higher in IPL-exposed animals (3 in IPL-exposed mice versus 1 in non-IPL-exposed mice).

Conclusion: The results suggest that IPL exposition may inhibit skin carcinogenesis, but its use may promote malignant conversion of skin lesions.

Keywords: carcinogenesis, DMAB, mice, skin cancer, TPA

Biography:

Ana Faustino holds a Master in Veterinary Medicine and a European PhD in Veterinary Sciences. Animal models of cancer, tumoral angiogenesis and imaging are her main areas of interest. She has collaborating in several Financed Research projects. The results of her works were published in more than 250 publications in several formats. She received several prizes of scientific merit, and highlights and press honours. She has experience in supervising graduate and post-graduate students. She participated in several courses, workshops, international and national meetings. She is editorial member of several scientific journals and reviewer of more than 300 manuscripts. She is Guest Editor of two special issues in Veterinary Animals and in Life.

Certificate of Recognition

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