IV CONGRESSO LATINO-AMERICANO DE TOXICOLOGIA CLÍNICO-LABORATORIAL

TOPICAL OLEIC ACID ATTENUATES HYPERSENSITIVITY IN A PRECLINICAL ACUTE PAIN MODEL

Rafaela Dias[1]; Patrick Tuzi Serafini[1]; Evelyne Silva Brum[1,2]; Amanda Favarin[1]; Gabriela Becker[1]; Indiara Brusco[1,3]; Sara Marchesan Oliveira[1]

[1] Universidade Federal de Santa Maria, Santa Maria, RS, Brasil (UFSM); [2] Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brasil (UFRGS); [3] Universidade Comunitária da Região de Chapecó, Chapecó, SC, Brasil (UnoChapecó)

INTRODUCTION: Sunburn is a significant public health concern, especially in countries with a favorable climate, such as Brazil. UVB radiation from sunlight can cause pain, inflammation, edema, erythema, and production of reactive oxygen species in exposed tissues. Although sunburn treatment is effective, its adverse effects limit its long-term use. Therefore, new pharmacological approaches are crucial, and natural products offer promising substances. In this context, oleic acid (OA), a natural compound found in various foods and cellular structures, is notable for its well-documented anti-inflammatory properties. **OBJECTIVE:** Thus, we evaluated the antinociceptive and anti-inflammatory effects of topical OA application in a UVB-induced sunburn model. **MATERIAL AND METHODS:** We used male Swiss mice (25–30 g; Ethical approval 140270722) to achieve this objective, exposing the right hind paw to UVB radiation (0.75 J/cm² for 20 min - single exposure). After exposure, 15 mg/paw of topical treatment gel (vehicle), gel containing OA (3%) and gel containing dexamethasone 0.1% (positive control) were applied. Mechanical sensitivity, polymorphonuclear cell count and oxidative stress were analyzed. **RESULTS AND CONCLUSION:** Oleic acid reduced mechanical sensitivity, cellular infiltration and serum levels of reactive oxidative species. Similar results were obtained with topical treatment with dexamethasone. Therefore, OA appears to be a promising choice for treating skin conditions related to sunburn.

Keywords: Sunburn; inflammation; inflammatory cells; nociception; pain.

Acknowledgments: *FAPERGS (21/2551–0001966-2), CAPES, CAPES/PROEX, CNPq (309404/2023-1). CNPq/PIBIC.*